Robert L. Aronson, professor emeritus of Labor Economics at the School of Industrial and Labor Relations, and the last remaining member of the first generation of faculty who built the ILR School, passed away in April at the age of 104. Bob was born on January 22, 1917, in Dunkirk, New York. In 1929, his family moved to Cleveland, Ohio. He attended Ohio State University, earning his B.A. in Economics in 1940 and an M.A. in Economics in 1941, at which point his education was rudely interrupted by the Second World War. Bob joined the Army Air Corps in 1942 and served as a B-24 navigator with the 456th Bombardment Group, based in Italy, through 1945. During the war he flew upwards of 50 missions. One of us liked to tease Bob that, given the odds of being shot down on each mission, he was statistically dead by 1944.

After the war Bob went to Princeton University for his Ph.D. in Economics (completed in 1953), where he studied under the prominent labor economist Richard Lester. It was at Princeton that he met his first wife, Judith, when she audited a course in advanced economic theory. They married in 1948, and two years later, in the fall of 1950, Bob joined the faculty of the New York State School of
Industrial and Labor Relations. When Bob arrived in Ithaca, ILR was not yet five years old. He was a key member in the early development of the School’s Labor Economics Department and helped to assemble the strong group of labor economists that the School has had since the 1970s. Bob taught the required labor economics course for both undergraduates and professional masters students, and also a course on Labor Markets and Economic Dislocation. In 1983, he became an emeritus professor, a victim of mandatory retirement.

Bob published several monographs and articles on topics associated with U.S. (and New York State) labor markets in the decades after the Second World War. He was primarily interested in the effects of industrial and technological change on workers, unions, and labor markets. He published two monographs on the effects of plant closures in New York: “The Economic Consequences of Plant Shutdowns in New York State” (1980, with Robert McKersie), and “Workers and Industrial Change: A case study in labor mobility” (1957, with Leonard Adams). The latter work, which examined workers’ attitudes and mobility in Auburn, New York, before and after its International Harvester plant closed in 1950, was named by the Princeton Industrial Relations Section as one of the year’s Outstanding Books on Industrial Relations. Bob also published studies of “Vesting and Transferability of Pension Rights,” federal manpower planning, the impact of federal government spending on the labor market for scientists and engineers, the challenges of automation to collective bargaining, and industrial workers in Jamaica.

Bob’s contributions to the ILR School and the field of labor economics went far beyond his published research. He served as the associate editor of the Industrial and Labor Relations Review from 1952-56, and as its editor from 1957-62. He also served as ILR’s assistant director of research from 1952-62, and as the director of its Manpower Research Program. Among other activities, he was a Fulbright Fellow at the University of the West Indies in 1957-58, a consultant to the Government of Ghana on wage policy in the public sector in 1967, and, from 1972 to 1991, a member of an ad-hoc
panel of mediators/fact finders for the New York State Employment Relations Board. Over the years he also held positions as a visiting professor at Ohio State University, the University of Louisville, and the University of California, Berkeley, and as a visiting fellow at Birkbeck College, University of London.

Along with his teaching, research, and service, Bob was a mentor to many students, some of whom went on to become prominent in the fields of economics and industrial relations. David Lipsky, emeritus professor at ILR and Dean of the School from 1988 to 1997, writes how, as an undergraduate at ILR, he planned to go to law school until he took the required labor economics course from Bob. He loved the course, “adopted” Bob as his faculty advisor and mentor, and eventually, with Bob’s guidance, went to MIT for his Ph.D. in Economics. David describes Bob’s advice and assistance as “invaluable.”

Bob was a mentor to younger faculty and an example for older faculty. At his retirement party in 1983, Bob told his labor economics colleagues that the last five years of his career were the happiest ones because he had learned so much from them. His kind words had what we suspect was his intended effect, leading senior faculty members to increase their mentoring of younger colleagues. When this committee asked those who remember Bob to comment on him, they described him as compassionate, supportive, gracious, patient, and a gem; the two words most often used to describe him were kind and gentle. Bob helped all of us, in one way or another, and in doing so he made ILR a better place.

Bob contributed to Cornell and the Ithaca community in many ways. A strong believer in faculty collegiality, he served as president of the Statler Club, Cornell’s former faculty club. He was committed to community service, and served on the board of Planned Parenthood of Tompkins County and as chair of the Town of Ithaca’s Ethics Board. Bob also was a board member of the Ithaca Memorial Society and a member of Local Group 73 of Amnesty International (Ithaca) and he volunteered with Literacy Volunteers of Tompkins County.
When Bob retired in 1983 he did not give up academic work or coming to campus. He began work on a book entitled Self-Employment: A Labor Market Perspective, which was published by ILR Press in 1991. He also continued to come to lunch at the Statler, being there almost every Monday through Friday for several years after retiring, and every Friday (for the clam chowder and free cookies) until he was well into his 90s. Friday lunches with Bob (and former ILR colleague Ron Donovan) were something that several of us looked forward to every week. Bob’s nonprofessional interests included reading, music (especially the piano, on which he began taking lessons at age 60), foreign travel, playing tennis and squash, cross-country skiing, nature walks, and flying.

Bob and his wife Judy raised two daughters, Michal and Elizabeth. Judy passed away in 1992 after a battle with cancer. Three years later Bob married Nancy Bent, which brought him additional family and happiness. Nancy passed away in 2000.

Bob remained interested in the ILR School long after his retirement. He was a frequent attendee at the Labor Economics workshop, and seldom missed a job talk. Indeed, he attended a job talk on his 90th birthday. When four of us (including then Dean Kevin Hallock) visited Bob on his 100th birthday, he inquired about retirements, hiring, and diversity among the faculty, and he asked Kevin more than once if the School was hiring more women.

The day after we visited Bob, he emailed to thank us for coming to see him and concluded: “I will always be grateful that Dick Lester, my mentor at Princeton, steered me to ILR and Cornell.” We are sure that all of the faculty that remember Bob would respond that we too are grateful that he came to ILR. Bob was a great colleague, who by his kind and gentle demeanor taught us how to be better human beings. He will be missed.

Written by George R. Boyer, chair; Ronald G. Ehrenberg, Robert S. Smith
Neil Ashcroft was born in London, England on November 27, 1938. He remembered from his childhood the blackouts and bombings of World War II. Two years after the war, the Ashcroft family settled in New Zealand. Neil received Bachelor (1958) and Master (1960) of Science degrees from the University of New Zealand, today the Victoria University of Wellington, which awarded him an honorary doctorate in 1996.

He received his Ph.D. in physics from Cambridge (1964), working with the well-known solid state theorists John Ziman and Volker Heine. His thesis contained one of the earliest calculations of the structure of the Fermi surface of aluminium, the most fundamental determinant of any particular metal’s electronic properties. When he lectured on his thesis in America, he enjoyed explaining that aluminium was a “transatlantic isotope” of aluminum.

In 1965, Neil came to Cornell as a postdoc. He joined our faculty in 1966 and remained a member of the Physics Department for the rest of his life. He became the Horace White Professor of Physics in 1990, and retired in 2006. After a long illness, he died in Ithaca on March 15, 2021.
March 15, 2021.

Neil’s wide-ranging research in the field of condensed matter physics included matter under extreme pressures, high-temperature superconductivity, metallic hydrogen and its alloys, metal–insulator transitions, and density functional theory. After his retirement he joined the research group of Roald Hoffmann in Cornell’s Chemistry Department, collaborating on almost 50 joint papers. Roald said that “Neil was wise and perceptive, fascinated by the border between chemistry and physics. We valued his physical insight and remember his gentle wit.”

In 1968, Neil proposed that at ultrahigh pressures hydrogen would become a metal, and a high-temperature superconductor. Three decades later experimentalists showed that hydrogen molecules did indeed turn metallic at enormous pressures.

When Neil’s research group predicted in the 1990s that highly compressed lithium would change from a highly symmetric, close-packed structure to a form of lower symmetry, with more conduction electrons per atom, that unexpected transition was quickly confirmed.

Two decades ago Neil predicted that hydrogen-enriched metallic elements would become ultrahigh-temperature superconductors under extreme pressures. In the past six years, that, too, has been confirmed. Several research groups achieved record high temperatures—room temperature and above—with superconducting lanthanum decahydride and Sulfur trihydride. Room-temperature superconductivity has the potential to revolutionize technology.

Neil was also a talented administrator. He was director of our Laboratory of Atomic and Solid State Physics (LASSP) 1979–84 and director of the Cornell Center for Materials Research (formerly the Materials Science Center --- Neil renamed it) 1997–2000. He played a vital role in launching the Cornell High Energy Synchrotron Source and served as its coprincipal investigator and associate director 1978–89 and its deputy director 1990–97.
I succeeded Neil as director of LASSP from 1984-90. I had an easy time of it, because of the superb administrators he had hunted down and hired during his own term.

The happiest years of my professional life were 1968–76 when Neil and I wrote, and saw into print, our book, *Solid State Physics*, which became one of the best-known advanced physics texts of the 20th (and 21st) century. Neil was fascinated with materials. Each was like a personal friend to him. I had little interest in or knowledge about particular materials. What fascinated me was the beautiful conceptual structure that encompassed all of them.

Neil wrote most of the first drafts. I would rarely understand what the overall issue was and would revise his text into something that made more general sense to me. Neil would then have to clarify my draft, correcting all the mistakes I had introduced. Back and forth we went, slowly converging on something that looked good to us both.

This was before the arrival of personal computers. I typed every page on a state-of-the-art IBM “bouncing-ball” typewriter, making revisions with a white “erasing ribbon” and retyping entire pages when revisions were major. It was a slow process. This gave us lots of time to think further and argue more about what we were writing. We were both having a wonderful time.

Neil had a fine sense of humor. He was a great mimic and did a superb Hans Bethe. We enjoyed dealing with each other’s idiosyncrasies throughout our collaboration, and our fun permeates the book. That might explain why it’s still thriving in its original edition, 45 years after it was published.

In 1990, I remarked to Bethe that Ashcroft and Mermin, as the book became known, was still in its first edition after 24 years. Hans said this showed “the stability of the subject.” True enough. But I believe that those 24 years, and the two more decades since then, also reflect the fact that, unlike almost all other technical books, ours entertains the reader almost as much as Neil and I entertained each other.
during our six years of writing.

We even had fun reading pager proofs and making our enormous index. Putting together an index in 1975 was hard work. Every entry was written by hand on a “3-by-5 card.” If we stacked them, the pile would have been a couple of meters high. Neil’s favorite index entry is “Cart, before horse, 92,” followed nine pages later by “Horse, after cart, 92.” My favorite, on page 808, is “Exclamation marks, 61, 185, 219, 224 (twice!), 291, 305, 403, 808.” This by itself indicates the difference in our styles. The book itself has nevertheless a uniform tone that is neither of ours, because we negotiated almost every word.

My only other collaboration with Neil was a short memorial article in 2006, “Hans Bethe’s Contributions to Solid-State Physics.” Our revisions, re-revisions, and re-re-revisions were unbelievably easier in the modern era, but just as extensive. Easy as it had become, this made us realize that we no longer had the energy to write a second edition of our book, even if we had thought one was needed.

Neil was a member of the U.S. National Academy of Sciences. More impressively, he was also a foreign member of the Russian Academy of Sciences. He was informed of this only by a letter, sent by ordinary (paper) mail. The day the letter arrived he called me into his office and showed it to me. “What do you make of this?”, he asked. I was bowled over. “Neil, congratulations, you’ve become an Academician!”

This memorial note about Neil would have been much better if I still had him with me to do our dance of multiple revisions. I have tried to imagine his ghost correcting and improving on me, but it’s not the same as the real thing.

I miss Neil enormously.

Written by N. David Mermin
Professor Harold Bierman, Jr. (Hal) was born in New York City on June 17, 1924. He passed away on February 12, 2021 in Ocean Isle Beach, South Carolina. In 1956, Hal joined the faculty of the Cornell Graduate School of Business and Public Administration, which later became the Samuel Curtis Johnson Graduate School of Management at Cornell University (“Johnson School”). Professor Bierman joined Cornell as an associate professor, having been a faculty member at Louisiana State University and the University of Chicago following his Ph.D. at the University of Michigan. He was promoted to full professor in 1961 and was named an emeritus professor in 2015.

Professor Bierman was the first person appointed to an endowed professorship in the Johnson School, becoming the Nicholas Noyes Professor of Business Administration in 1969. His first 40 years as an academic were feted when he received the 1985 annual award given jointly by the Dow Jones Company and the AACSBA (The Association to Advance Collegiate Schools of Business) "In recognition of outstanding contributions and distinguished service in the field of collegiate education for business and administration".
During his 59 years as a Cornell faculty member, Professor Bierman held important administrative positions in the Johnson School in Executive Education, Johnson’s business programs and the Dean’s office. In addition to official positions, Hal was an academic leader of the School throughout his career. In the 1960s, Hal and Tom Dyckman led faculty recruiting in all academic areas, building faculty strength in the separate business fields. Professor Bierman was always an important and thoughtful voice in faculty deliberations.

Professor Bierman taught thousands of students who went on to great careers. When deans visited alumni, the alumni usually asked “How is Professor Bierman? He had a huge impact on me.” One visible display of the alumni affection was that a group of alumni led by Charles Knight, 1957, B. Eng. 1958, MBA 1959, long-time CEO of Emerson, endowed the Harold Bierman, Jr. Distinguished Professorship of Management, with the understanding that Professor Bierman was to be the first incumbent. Hal was appointed to that chair in 2010.

Hal led a varied and full life. He played multiple sports, and he coached children’s teams for many years. He and Florence loved the theater and restaurants. He served multiple academic societies as a referee or officer. In 1941, he was appointed to the Naval Academy based on his scholarly and athletic achievements. He graduated from the Naval Academy in 1945 and was on active duty for four years serving at the end of World War II, and again when his Ph.D. program at Michigan was interrupted and he was called back during the Korean conflict.

Professor Bierman wrote more than 180 articles and over 30 books in both accounting and finance during his career. He had a great impact on the academic finance field and the practice of finance, particularly through one of his books. *The Capital Budgeting Decision*, co-authored with his friend and colleague Seymour Smidt. Nine editions were published between 1960 and 2007 in nine foreign languages: French, Spanish, Italian, Turkish, Russian,
Japanese, Portuguese, Greek, and Vietnamese. On the occasion of the 75th anniversary of the American Finance Association, the AFA produced a video based on interviews with 19 people who had major impacts on the theory and practice of finance. Ten of those 19 people were Nobel Laureates. Professors Bierman and Smidt were included, discussing their book and its contribution to the practice of finance. Especially in *The Capital Budgeting Decision*, but in many ways throughout his career, Professor Bierman developed and championed a road map to evaluate the merits of different investment options in private business, the public sector, and for individuals. These are tools used by nearly every organization on a daily basis.

Hal was a visiting professor at the University of Cambridge, Katholieke Universiteit Leuven, and INSEAD. He was the Shell Professor of Management at the University of the West Indies, where he helped UWI develop their business programs. UWI awarded Professor Bierman an honorary Doctor of Law degree in 2001.

Professor Bierman was active in business organizations as a consultant and advisor, including the Financial Accounting Standards Board, Prudential Bache Securities, Anheuser-Busch, Emerson Electric, Dow Chemical, Exxon, IBM, Xerox, Corning Glass Works, Owens Corning Fiberglas, Gould Pumps, and AT&T. Still, his greatest effect on the business world came through his thousands of successful students.

Hal is survived by his wife of 69 years Florence (Kelso) Bierman, their four sons (James, Scott, Bruce, and Jonathan) and their wives, 11 grandchildren and six great grandchildren. He was blessed with a great family, and they were blessed with him.

Professor Bierman’s impact on the field of finance, the practice of business, Cornell and the Johnson School, and his students was broad and deep. He will be missed by colleagues, students, family, and friends. His legacy lives on.
Written by Robert A. (Bob) Jarrow and L. Joseph (Joe) Thomas
Richard Newell Boyd, the Susan Linn Sage Professor of Philosophy and Humane Letters Emeritus, died on February 20, 2021 at the age of 78. During his forty-nine years in the Cornell Philosophy Department, Dick was a leading innovator, with worldwide influence, in the philosophy of science, the philosophy of mind and the philosophical study of moral judgment. His engagement in diverse fundamental controversies, with deep appreciation of opposing positions, made him a richly stimulating teacher and colleague. His enthusiastic and supportive presence will be sorely missed by his many friends, who extend their deep sympathy to his wife, Barbara Koslowski, professor emerita of Human Development in the College of Human Ecology, and their son, Christopher.

Dick was born and raised in Arlington, Virginia. He grew up surrounded by people discussing politics, experienced the McCarthy era, and watched his parents stand up for colleagues and friends who had been blacklisted or shunned. He admired his parents for allowing him to play with the son of a reported Communist, even though other children were not allowed to do so, and for allowing him, when he was a teenager, to drive an African American student
to a school meeting when Virginia schools were first being integrated. These episodes, along with the conservative political climate in Arlington, fed his interest in political issues and in Marxism. With characteristic energy and engagement, throughout his adult life he joined with others in advocating for progress against racism and the unjust exploitation of workers, and for the end of destructive wars and of American support for oppressive governments, often in opposition to policies of the U.S. government or university administrations.

Dick received his Ph.D. in 1970 from the MIT Philosophy Department, with a dissertation in mathematical logic, preceded by a B.S. from MIT, in 1963, in mathematics. As a graduate student, he developed his abiding interest in the philosophy of science, stimulated by Hilary Putnam, who left MIT for Harvard in 1965. Dick joined him there as a faculty member in 1968, after lectureships at Berkeley and the University of Michigan, and then came to Cornell in 1972.

Dick, together with Hilary Putnam, led a fundamental transformation of the philosophy of science. At the start of their work, the most influential perspective in the philosophy of science denied that scientific research establishes the truth, or approximate truth, of propositions concerning unobservable objects and causal mechanisms, for example, electrons and electromagnetic fields. In this “logical empiricist” view, progress in the development of scientific laws and theories solely consists of increasingly extensive and accurate descriptions of regular associations of observable facts and properties, descriptions that are confirmed by their ability to lead to accurate predictions.

In the contrasting “scientific realist” perspective that Dick advanced, mature sciences have established the existence of unobservable entities and causal mechanisms and, with growing accuracy, approximate truths about them. As in all his work, he deeply appreciated the grains of truth in the position he opposed, which he innovatively integrated into his own perspective. He fully acknowledged the central roles of predictive success and of revision
in light of predictive failure in scientific progress. But, he argued, scientific realism is justified as the best explanation of the vast and vastly increasing successes of mature theoretical sciences in observational predictions. These predictions have been based on theories that describe unobservable entities and causal mechanisms. The trajectory of success would be an inexplicable miracle if those descriptions were not approximately and increasingly accurate. Logical empiricists had ingeniously shown how mutually incompatible theories could be constructed to fit any set of data and took the existence of such alternatives to count against scientific realism. In his response, Dick emphasized that beliefs about causal mechanisms based on current theories must play an independent role in the evaluation of alternative explanations of observational success; he argued that similar reliance on beliefs about causes is needed in the central achievement of science according to logical empiricism: the justification of descriptions of regular associations of observable phenomena, continuing into the future. Further scrutinizing the role of observational testing in scientific progress, he noted the frequent conflicts between the current record of observations and the best-established theories; he argued that the assessment of current observations as mismeasurements or as misleading on the basis of current theories of underlying unobservable causal processes has been essential to scientific progress, as judged by logical empiricists as well as by scientific realists. These wide-ranging inquiries into the interaction of theorizing and observation played a leading role in a transformation of the philosophy of science which made scientific realism the mainstream view.

In his influential response to the mind-body problem, Dick deployed the same innovative capacity to accommodate the insight of an opposing view. He was a materialist, who took mental events and processes to be physical events and processes. In his view, an episode of pain is not merely caused by neural events, involving, say, the firing of C-fibers, it is itself a neural phenomenon. But he denied (as a dualist would) that a mental property (say, painfulness) is identical with a physical property. According to his non-reductive materialism, mental properties are realized in physical events and
processes but are not identical with properties definable in physical terms. Creatively modifying and reversing the thrust of an influential argument, due to Saul Kripke, in support of dualism, Dick argued that a mental property that is actually always realized in neuro-physiological events of a certain sort nonetheless could conceivably be realized in vastly different events. Through this and other powerful arguments, he again played a leading role in the transformation of a central philosophical controversy, in which his non-reductive position became the mainstream of materialism.

Dick also played a leading role in a fundamental controversy about moral judgments. Along with his colleagues, Nicholas Sturgeon and Richard Miller, he developed and defended a realist view of moral judgments: A moral judgment is a claim, true or false, that makes reference to a moral property; the evolution of moral judgments in the course of human history and their role in the explanation of social change help to establish the approximate truth of such claims. Dick’s arguments for moral realism extended his insights into the nature of scientific discourse and scientific progress into what had seemed a radically different realm.

Dick’s interventions in general philosophical controversies were always richly informed by the practices of specific sciences, and his general perspectives, in turn, illuminated his explorations of the methods and content of specific sciences, including biology and chemistry. For example, his realism extended to questions about the classification of natural kinds, such as species. Responding to the fact that all members of a species do not share a single set of necessary and sufficient properties, he proposed the notion of homeostatic property clusters, the idea that species and other natural kinds are clusters of typically co-occurring properties that result from and are sustained by homeostatic mechanisms such as gene exchange or the sharing of a common ancestor or a particular ecological niche. Collaboration with his son, Christopher, a chemist, led to work in which they noted that some of the standard generalizations relied on in synthetic chemistry are not strictly accurate but accurate often enough to form a solid basis for hypothesizing (or, more prosaically, guessing). In related work,
Dick pointed to an important role that metaphor plays in science: fixing the reference for scientific terms in a non-definitional way, thereby permitting scientists to refer to certain kinds, in spite of a level of ignorance about those kinds that obstructs successful definition. By virtue of such referential abilities, researchers can at least formulate questions to guide research, research which may eventually remedy that ignorance.

Dick’s enthusiasm for philosophical discussion, with appreciation of positions other than his own, made him a stimulating colleague and teacher. Responses to the news of his death by those who knew him were uniformly characterized by gratitude for a genial, insightful interlocutor, as in this representative sample: “In discussion he combined greater penetration, quickness and fluency, along with breadth of knowledge and interests, than anyone else I’ve ever encountered,” (Carl Ginet, professor emeritus in Philosophy); “My single biggest philosophical influence, always generous with his time and penetrating with his comments and criticisms. He was also a wonderful and very animated teacher, buzzing around the room from one board to another, and making quite sophisticated arguments intelligible to undergraduates who had never taken a philosophy class before,” (Philip Gasper, a graduate student of Dick’s, professor at Madison College); “My best memories of my years at Cornell are linked to the conversations – and the arguments – Dick and I had. They got me thinking in new ways, imagining new solutions to problems I had found fairly intractable within my own theoretical frame of reference.”, (Professor Satya Mohanty, Department of Literatures in English).

Dick’s diverse non-academic interests included a life-long interest in cars, which he shared with his brother-in-law. When asked in a high-school awards interview about his hobbies, he replied, “I drive a very fast Chevy very fast.” His interest in politics was continuous with his interest in history in general. Historical interests led him to collecting antiques, which he regarded as pieces of social history. This diminished slightly after he had a child, and it was replaced by visits to zoos, natural history museums, bookstores, and comic book
shops, activities which he embraced with characteristic enthusiasm and enjoyment.

Dick Boyd’s memory is cherished by those whose lives he enriched. His work will be an enduring source of philosophical insight.

*Written by Richard Miller and Harold Hodes*
Robert (Bob) Alan Buhrman (M.S. ‘69, Ph.D. ‘73), John Edson Sweet Memorial Emeritus Professor of Applied and Engineering Physics and Cornell’s second Senior Vice Provost for Research died April 13, 2021 after a battle with cancer.

He was born on April 24, 1945 and raised on a small produce and poultry farm in Maryland near the Catoctin Mountains. His father was a farmer and machinist, and his mother was a schoolteacher. In high school, he earned a full merit scholarship to Johns Hopkins University where he majored in Engineering Physics. After a chance comment at a Baltimore gathering, he decided to come to Cornell for graduate work in Applied Physics.

Bob’s thesis research on “zero-dimensional” superconductors was his gateway to a long and distinguished career of research in nanotechnology. His Ph.D. advisor, Professor Watt Webb, who was making a transition from solid-state physics to biophysics at the time, decided to give his solid-state physics lab equipment to Bob, and then commented to the department that “you might want to hire him.” They agreed. Upon graduation, he began immediately as
assistant professor at Cornell in Applied and Engineering Physics. He recounted that he defended his thesis one day and taught his first class the next.

From that point until his death, Bob led a research group that touched on a wide range of topics in nanoscience and nanotechnology, including applied superconductivity, high-efficiency light absorbers, properties of electric transport through nanoscale devices, and nanomagnetism. One highlight from the mid-1980’s was his discovery that the ubiquitous 1/f noise in metal-insulating-metal tunnel junctions are due to collections of two-level fluctuators – atoms that can shift back and forth between two different positions – which he showed by making a small enough junction that the motion of individual fluctuators could be separately observed. This finding remains relevant today in understanding the performance of tunnel devices including superconducting junctions used in quantum computers.

He is best known for his seminal contributions to nanomagnetism and spintronics in collaboration with his former student and Cornell Physics faculty member Dan Ralph. In a series of highly cited research papers starting around 1999, they first reported the ability to controllably switch a nanomagnet using spin-polarized electrical current rather than a magnetic field, an effect known as spin-transfer torque. These experiments were scientifically important in the field of magnetism, and they enabled technological developments that exist today as commercial products (spin-transfer-torque magnetic random access memory). Bob reinvigorated the magnetism research community again in 2011 by demonstrating the spin Hall effect in heavy metal/ferromagnetic metal bilayers. This effect had previously been thought of as a small, esoteric, and difficult to observe phenomena in semiconductors, but was discovered by Bob and his student Luqiao Liu to be very large in normal metals with a strong spin-orbit interaction. It proved to be an even more efficient way to switch the direction of small magnets compared to spin-transfer torque, launching a world-wide effort now underway to develop an improved generation of magnetic memory devices. As before, the discovery led to rich and interesting physical phenomena.
at the forefront of condensed matter physics.

Despite the high impact of his many research accomplishments on both science and technology, Bob was known to spurn hype. He gained recognition as a clear and practical thinker in research, teaching, and administration. These qualities served him well during his decade-long service as director of Applied and Engineering Physics (AEP). During that time Bob made critical decisions that shaped AEP in terms of research focus, culture, and teaching. He took a similar approach with him to Day Hall when he became Cornell’s Senior Vice Provost for Research. When he finally stepped down from that role after another ten years of service, he was so well known for his integrity, dedication, and good judgement that Professor Melissa Hines commemorated the event by distributing coffee mugs labeled with the letters “WWBD,” which stands for “What would Bob do?” as a model to Cornellians going forward.

His reputation for good judgment caused his students and colleagues to solicit his advice, which he was sometimes reluctant to give. When he did, it was memorable. For an example, former graduate student Brian Moeckly asked Bob for career advice when unsure of which job to pursue. Bob’s reply was, “if you don’t know what to do, do that which will maximize your short-term happiness.” Bob’s graduate students recall him as a good advisor who didn’t help “too much.” He let students learn to make good decisions by allowing (or helping) them to make them on their own.

Despite a carefully cultivated gruff exterior, Bob was thoughtful and cared about other people. He was also devoted to teaching; even returning to it after stepping down as Senior Vice Provost for Research. Most recently he taught statistical mechanics to a joint class of seniors from AEP and Physics. As founding director for the National Science Foundation supported Center for Nanoscale Systems, Bob also created the Cornell Institute for Physics Teachers on a suggestion from his daughter, Susannah Buhrman-Deever.

Firmly cemented after more than 50 years at Cornell, Bob’s legacy
endures. The impact of his research on science and society, the scientific and leadership contributions he made to Cornell research centers, the numerous graduate students that he trained who continue to work in academia, industry, and government, the high quality of his teaching, the strength of his leadership in AEP, and the many positive changes he made for Cornell Research as Senior Vice Provost are only a few examples of his tremendous impact on our community.

Written by Greg Fuchs, John Buhrman, Dan Ralph, and Lois Pollack
K. Bingham Cady, professor emeritus of nuclear engineering in the Sibley School of Mechanical and Aerospace Engineering, died December 10, 2020, at Northwestern Memorial Hospital in Chicago. He was 84.

In a career that straddled academia and industry, Bing helped improve the safety of nuclear fission reactors by developing computational models to simulate how reactors would respond to operational fluctuations. He was part of a generation of nuclear reactor theorists that were trained at a remarkably deep level, in large part because they studied under the founders of the field.

Bing was born in Chicago, Illinois in 1936. A prodigy, he dropped out of high school and entered the University of Wisconsin, Madison, at the age of 15 through a Ford Foundation pre-induction scholarship. He soon transferred to MIT, where he studied naval architecture and marine engineering. For the summer of 1955, Bing took a job in the merchant marine working for Moore-McCormack Steamship Lines, a position which took him to ports around South America. A shore-leave in Brazil landed him in jail after he went to...
a bar with fellow sailors and a fight broke out. The captain of the ship bailed them out the following day, but that experience evidently ended Bing’s interest in the merchant marine. He instead took a job with Bethlehem Steel, Shipbuilding Division, in Quincy, Massachusetts, working on the construction of the first nuclear-powered surface ship, the USS Long Beach, after receiving his S.B. from MIT in 1956. Bethlehem Steel sent Bing back to MIT in 1959 to get his M.S. degree and he then decided to go straight for the Ph.D., which he completed in 1962. At MIT, Bing worked for Manson Benedict, who was responsible for developing the gaseous diffusion method of isotope enrichment in the Manhattan Project, and who subsequently founded the nuclear engineering program at MIT.

Bing joined the faculty at Cornell in 1962, in part to work with people like Hans Bethe and Mark Nelkin (a student of Bethe’s). For the next 49 years, Bing taught in the departments of Applied and Engineering Physics, Nuclear Science and Engineering, and Theoretical and Applied Mechanics. He served as the College of Engineering’s associate dean for professional programs from 1984-85, associate dean for college affairs from 1985-90, and acting dean of Engineering in 1993. Bing loved teaching and kept tabs on the progress of his former Ph.D. students, always taking pride in their publications and professional accomplishments.

In the 1960s, Bing developed foundational techniques in response theory that allow one to estimate the transient behavior of systems with many degrees of freedom. This approach to modeling the response of a system to perturbations also found applications in systems analysis in the physical sciences, the quantitative social sciences, and financial analysis. Following the partial meltdown of a reactor at Three Mile Island in 1979, Bing participated in an industry-wide effort to analyze how light-water reactors could handle degraded-core and melted-core accidents. Bing and his team contributed to the computer-code systems and physical modeling required for the development of the Modular Accident Analysis Program (MAAP), which became the industry standard for simulating the response of nuclear reactors to severe accidents and
stabilizing their performance.

While on various sabbaticals from Cornell, Bing was a consultant for a number of companies and national laboratories, including Knolls Atomic Power Laboratory; the U.S. Atomic Energy Commission’s Division of Nuclear Licensing; the Department of Nuclear Energy, Brookhaven National Laboratory; Hanford Engineering Development Laboratory; Fauske and Associates, Inc.; and the Milwaukee Company Properties, Inc.. He also served as president of the Niagara-Finger Lakes section of the American Nuclear Society.

At Cornell, Bing advised numerous doctoral students. His first, Charles Robert MacVean, commanded the nuclear submarine, USS Seawolf, during critical missions in the Pacific to monitor Soviet communications (and was the subject of the book Blind Man’s Bluff). Many of his other students joined the faculties of major institutions, including MIT, UC Berkeley, and the University of Texas at Austin. Bing was a member of Phi Eta Sigma, Sigma Xi, and Tau Beta Pi. In addition to being a Ford Foundation scholar, he received a Bethlehem Steel fellowship, a Woodrow Wilson fellowship, and a U.S. Atomic Energy Commission fellowship in nuclear science and engineering.

After he retired from Cornell in 2011, Bing moved back to Chicago, where he enjoyed spending time with his family and sailing on Lake Michigan. Four of his five children attended Cornell, and he taught all of them to sail on Cayuga Lake, which was one of Bing’s true passions.

In addition to his professional accomplishments, successes as a teacher of undergraduates and mentor of graduate students, Bing was a great colleague for those of us who were lucky enough to work closely with him. He was always friendly, enthusiastic, and a good listener, whether in technical discussions or in his stints in the Dean’s Office, and he invariably tried to be helpful if he could be. His infectious smile was passed around liberally to all of those around him.
K. Bingham Cady is survived by his partner, Janet Reece; a sister, Susan Westby; children Julia Cady Marrocco ’77 (Dante), Sarah Cady Minas (Ed), Nell Cady-Kruse ’84, MBA ’85 (Steve), C. Conrad Cady ’86 (Laura) and Courtney Cady Wood ’98 (Sean); and numerous grandchildren.

Written by Mark R. Deinert, David A. Hammer, and Vaclav O. Kostroun
Leland “Skip” Carmichael, Ph.D. ’59, the John M. Olin Professor of Virology Emeritus and an expert on canine infectious diseases, died July 27 in Ithaca. He was 90.

Carmichael played major roles in identifying, treating, and preventing many canine infectious diseases. As a Cornell faculty member, he developed a canine parvovirus vaccine that curbed a global pandemic in the early 1980s.

“He was one of Cornell’s all-time greats,” said Maurice White, professor emeritus of ambulatory medicine and Carmichael’s friend and former colleague. “When he came up for emeritus, one of the respondents said in a letter that Skip had done ‘more for the health of animals than anyone since [Louis] Pasteur.’”

“All of us who knew Skip will miss his sense of humor and quick wit,” added Dr. Lorin D. Warnick, Ph.D. ’94, the Austin O. Hooey Dean of Veterinary Medicine. “We extend our condolences to his family members and many friends.”

Leland Carmichael

June 15, 1930 – July 27, 2020
Carmichael was born in 1930 in Los Angeles. He received his D.V.M. degree from the University of California, Davis, in 1956 before coming to Cornell, where he earned his doctorate from the Veterinary Virus Research Institute, now the Baker Institute for Animal Health at the College of Veterinary Medicine. He was immediately hired as a faculty member and served for more than 38 years before retiring in 1997.

In 1966, the disease canine brucellosis, a bacterial infection of the reproductive system, began appearing in beagles. Carmichael and colleagues were the first to describe the disease and identify the pathogen, which led to effective controls and treatments. Carmichael’s foundational work on canine adenovirus types 1 and 2 and canine herpesvirus also led to declines of those diseases.

His most significant achievement began in the summer of 1978, when a highly infectious canine parvovirus started to spread, eventually reaching pandemic proportions. With virologist Max Appel, a colleague at the institute, Carmichael perfected a modified live-virus vaccine three years later that is still used today.

“He made many important scientific and practical advances through his research on canine infectious diseases,” said Scott Coonrod, director of the Baker Institute for Animal Health and the Judy Wilpon Professor of Epigenetics and Cancer Biology. “He was an unforgettable character who had a host of friends throughout the world. Skip was greatly admired and beloved by his many students and trainees.”

Carmichael was predeceased by his wife of more than 60 years, Mary Margaret, and is survived by three sons.

Written by Krishna Ramanujan
Originally published in the Cornell Chronicle on August 5, 2020
Professor Terrence (Terry) L. Fine passed away on January 31, 2021 at the age of 81. Terry was born in New York City on March 9, 1939 to Lola Breidberg and Abraham Fine. He received the B.E.E. (’58) from City College of New York, the S.M. (’59) and Ph.D. (’63) from Harvard University. In 1964, he was awarded a Miller Institute Junior Research Fellowship at the University of California at Berkeley where he remained until he came to Cornell’s School of Electrical Engineering in 1966.

Terry served on the faculty of the School of Electrical and Computer Engineering from 1966 until 2010. While at Cornell, he supervised 21 Ph.D. students, all of whom he worked with closely. Terry was very passionate about ECE student support and the evolution of the ECE curriculum. He excelled in conducting research, teaching, and providing professional service until his retirement in 2010.

Terry’s research started with his Ph.D. dissertation work on statistical delta modulation. About 20 years later, this research and a subsequent paper became half of a 1986 monograph entitled *Recursive Source Coding: A theory for the practice of waveform*
coding, authored by G. Gabor and Z. Gyorfi for Springer, where it was referred to as the “Fine-McMillan Recursive Quantizer.”

Some of Terry’s earliest research at Cornell attempted to develop axiomatic approaches to estimation and inference when too little is known at the outset to plausibly make a statistical model. This led to the dissertation of Terry’s first Ph.D. student.

The enduring theme of Terry’s research career was the foundations of probability, by which is meant a variety of interpretations/meanings (objective physical, subjective, epistemic-knowledge based) for probability, and more controversially, a variety of mathematical structures, especially ones that do not commit us to treating probability as a real number. He was particularly critical of suggestions that people approached notions of probability in a Bayesian manner. This work culminated in his most frequently cited work, his text Theories of Probability: An Examination of Foundations, published in 1973 by Academic Press.

In the period from 1989 through 1999, Terry became involved with statistical questions central to the then burgeoning field of artificial neural networks. This research led to several publications and conference presentations at NIPS, now NeurIPS, and several Ph.D. dissertations on both theoretical and applied questions involving neural networks. This work culminated in his book Feedforward Neural Network Methodology, published in 2006 by Springer.

An attempt to use the techniques of neural networks to increase the service capacity of cellular wireless networks resulted in a U.S. patent, with Stephen Wicker, on sensor-assisted ALOHA networks.

Terry provided immense service to his profession. He served as president of the IEEE Information Theory Group (1988-89), now the IEEE Information Theory Society, and as associate editor for the IEEE Transactions on Information Theory (1979-81 and 1985-87). He was a member of the Administrative Committee and frequent reviewer for the IEEE Transactions on Neural Networks. Terry was a founding member of Neural Information Processing Society.
(NIPS) administrative Board of Directors. He was a member of the Society for Imprecise Probability: Theories and Applications (SIPTA) since its founding in 2002 until 2009.

Terry provided outstanding and sustained service to the school, college, and university through his membership on, and leadership of, a wide variety of committees. Since its founding in 1973, Terry was elected chair of the ECE Policy Committee more often than any other faculty member. On the ECEPC, he was a steady proponent of responsible faculty direction of all aspects of the life of the school and urged informed involvement and consistency in actions taken.

Department faculty meetings were almost always energized by Terry’s strong advocacy or opposition of the issue under discussion. He was rarely neutral! He presented principled arguments to support his positions, and in this way helped the school develop a tradition of discussion and debate on all issues. From 2008 to 2010, Terry served ECE as its associate director. The associate director has the primary administrative responsibility for all aspects of the teaching program, including faculty teaching assignments, academic actions involving students, and evolution of the curriculum.

In the spring of 1999, Terry was asked by Vice Provost for Research, Bob Richardson, to serve as director of the Cornell Center for Applied Mathematics (CAM). He served in this role from 1999-2004, having been appointed for a second term. His service ended prematurely in 2004 due to severe illness. During his tenure as director, CAM had its largest graduate student enrollment.

He chaired the College’s Engineering Policy Committee on at least two occasions, served on numerous ad hoc promotion committees, served on and chaired the Nominations Committee, and served on the Academic Integrity Hearing Board.

At the University level, Terry served for decades on many standing committees and chaired a number of them that provided leadership for the University Faculty. He also chaired the Committee on Academic Freedom and the Professional Status of the Faculty, and
he served on FACTA. Terry was a member of all of the various forms of University Faculty governance starting with the Constituent Assembly created in response to the crisis of April 1969. With an exception for severe illness, he was a member of the current Faculty Senate from its inception until the time of his retirement. Terry also served on the University Faculty Committee, which is the executive committee of the Faculty Senate.

Terry taught an array of courses during his tenure at Electrical and Computer Engineering. He was the creator of several courses that are still being taught by our faculty, such as ECE 3100, 3250, and 4110. Terry’s teaching efforts were recognized by his being selected by a 1990 Merrill Presidential Scholar as an “Outstanding Educator,” the “Ruth and Joel Spira Excellence in Teaching Award” in ECE for 1998-1999, and the College “Fiona Ip and Donald Li” and the “Douglas Whitney” Excellence in Teaching Awards in 1996 and 2002, respectively. It is estimated that he taught more than 2500 students during his teaching career at Cornell.

Terry Fine will be remembered for his outstanding contributions to teaching, professional service, his research, and especially for his principled and energetic engagement with his colleagues on all issues facing the faculty. He was an ideal colleague and mentor for ECE faculty, students and the University at large.

Written by Clifford Pollock (Chair), Aaron Wagner, and Stephen Wicker
Frederick C. Gouldin

July 4, 1943 – May 29, 2021

Professor Frederick C. Gouldin of the Sibley School of Mechanical and Aerospace Engineering died May 29, 2021, in Ithaca. Fred was a distinguished and versatile scholar of combustion, a devoted teacher and mentor, and an exemplary colleague who made innumerable contributions to the community around him. He died after more than ten years of a dignified and determined battle with dementia during which he unceasingly challenged himself to realize his greatest potential as the brilliant, kind, modest, and gentlemanly scholar, athlete, and family man he was.

Fred’s research spanned many areas of combustion. He was perhaps best known for his fundamental studies of the behavior of premixed turbulent flames. Fred developed the turbulent v-flame, a versatile experimental configuration for studying the turbulent combustion that is still in use today. He pioneered the concept that flamelets in turbulent premixed combustion could be represented by fractal surfaces, and developed a new formulation of laminar flame speed corrected for this concept. The continuing use of fractals in the analysis of flame surfaces can be traced to Fred's original work on this problem. Fred organized and led international workshops on
turbulent flames that led to important advances in the technology that lies at the heart of modern ultra-clean combustion systems for electricity generation.

Fred also relished applications of combustion, ranging from rocket propellants, to gas turbine combustion, to incineration of municipal waste and destruction of chemical warfare agents, to fire suppression, to carbon-sequestering household cookstoves. He combined laser diagnostics and modeling of kinetics and flow to develop systems for monitoring the behavior of waste incinerators to ensure that they are operating safely.

Fred is fondly remembered by generations of students and research advisees. He thought of ways to make lectures and talks memorable and interesting – distilling ideas into a “cartoon” that conveyed the essence of an idea, and carefully considering how to format his lecture on the blackboard for maximum clarity. Fred taught a range of graduate and undergraduate courses in the thermal sciences and combustion, including turbulent combustion and physics of fluids. Fred’s influence on both graduate and undergraduate researchers was profound – different research advisees describe Fred’s positive impact on their career trajectory, his willingness to give a chance to less than stellar students, his generosity with his time and professional connections, and the impressive instrumentation that they used in his lab.

Fred was the quintessential good citizen of the department, university, research community, and greater community. At various times, he served as associate director for Graduate Affairs and associate director for Undergraduate Affairs for the Sibley School. At the University level, he served as associate dean of the faculty. His university service continued into retirement, as president of the Cornell Association of Professors Emeriti. Fred was an extremely active contributor to professional organizations, taking on leadership roles and serving on and chairing committees for the Combustion Institute, the Propellants and Combustion Technical Committee of the American Institute of Aeronautics and Astronautics, the National Research Council / Air Force Office of Scientific Research
Propulsion Panel, the National Academy of Engineering, and the Society of Automotive Engineers. He was the organizer of numerous scientific meetings, technical sessions, panels and workshops. Fred's extracurricular interests included serving as commodore of the Ithaca Yacht Club and as president of the Ithaca Rotary Club, by which he was honored on several occasions. Fred even chaired the Cayuga Heights deer committee, which was tasked with examining options for keeping the deer population under control. This last assignment, which involved strongly expressed opinions, may have been the one that posed the greatest challenges to Fred’s characteristic senses of civility and decorum.

Fred was born on July 4, 1943. He attended St. Stephen's School in Alexandria, and then Princeton University where in 1965 he received the B.S.E. degree with high honors in Aerospace and Mechanical Sciences. After graduation, Fred stayed at Princeton and received his Ph.D. in 1970. In 1966, Fred married his high school sweetheart, Elizabeth Fairfax (Fair) MacRae. They had two daughters, Ann and Cary.

After completing his doctorate, Fred joined the Cornell faculty. After the merger of the Graduate School of Aerospace Engineering with Mechanical Engineering in 1972, Fred spent his entire career on the faculty of the Sibley School of Mechanical and Aerospace Engineering. Fred spent sabbaticals at Cambridge University (Emmanuel College) and at CNRS, Orleans as well as at Sandia National Laboratories, Livermore.

Fred was a lifelong athlete whose many favorite sports included sailing, bicycling, running, skiing, hiking and tennis. At St. Stephens, Fred was on the football, wrestling and track teams. His senior year football team went undefeated. At Princeton, Fred was a quarterback on the Princeton football team and was a member of Princeton's famous 1964 football team which completed a perfect 9-0 season on their way to the Ivy League championship. Fred was also on the Princeton track team. At Cornell, Fred's early morning runs formed a part of his routine, and he often ran with professional colleagues. There was hardly a sport he didn't enthusiastically try,
including tossing the caber and throwing the 35-pound hammer at the Scottish Highland Games on Grandfather Mountain in North Carolina. After moving to Kendal, Fred continued to find pleasure and comfort in physical activity, walking two miles a day until a few weeks before his death.

Fred is survived by Fair, his wife of 54 years, as well as his daughters Ann Kay and Cary Gouldin, son-in-law Andrew Kay, and grandsons Will and Charlie.

Written by Elizabeth (Betta) Fisher (chair), Stephen Pope, and C. Tom Avedisian
Professor Emeritus Dr. R. Kenneth Horst, known as Ken, was a highly productive and widely respected plant pathologist, specializing in the diseases of floral crops. His scholarly contributions included the training of numerous graduate students who went on to successful careers in ornamentals pathology, now termed environmental horticulture pathology. Dr. Horst passed away on June 9, 2021, at the age of 85, following a long illness.

Dr. Horst received his bachelor’s degree from Ohio University in 1957, in plant science. Five years later he earned his Ph.D. in plant pathology from The Ohio State University and was hired by Yoder Brothers in Barberton, Ohio as the director of the Plant Pathology Laboratory for that leading chrysanthemum breeding company.

He came to Cornell University in 1968 as an assistant professor in the then Department of Plant Pathology (now the Section of Plant Pathology and Plant-Microbe Biology in the School of Integrative Plant Sciences). At Cornell he trained and mentored graduate students and conducted research on chrysanthemum, roses and other ornamental crops. His research specialty was diseases caused by
viruses and virus-like entities, but he also contributed significantly to knowledge of other important diseases, including Fusarium wilt, Botrytis blight, and powdery mildew. In addition to professorial lectures, Dr. Horst also played an active role in Extension education programs for the New York flower industry, giving presentations and preparing bulletins and recommendations and solving problems for the growers, frequently collaborating with his colleagues in other departments. He was tenured in 1973 and promoted to full professor in 1980.

A prolific writer, Dr. Horst authored or co-authored more than 230 articles, book chapters and books. He followed upon the outstanding work of Cynthia Westcott, Cornell Ph.D. ’32, by updating and expanding her Plant Disease Handbook, authoring the 4th, 5th, 6th and 7th editions of that encyclopedic reference. He also developed books for the American Phytopathological Society (APS): he authored the first edition of the Compendium of Chrysanthemum Diseases with his longtime friend Dr. Paul E. Nelson of Pennsylvania State University, wrote the first edition of the Compendium of Rose Diseases and co-authored a second edition titled the Compendium of Rose Diseases and Pests. Befitting someone who collected and organized information expertly, he maintained a particularly orderly office, scented with his signature aroma of pipe tobacco.

Professor Horst retired after 30 years with Cornell. He founded a private company with his longtime collaborator Herb Israel that was supported by a grant from the Church and Dwight company, a major American manufacturer of household products. H&I Agritech, for which he was president and CEO, was focused on the development of environmentally safe disease and insect control products. Dr. Horst patented a number of organic pest control agents and served as a consultant to the commercial flower industry internationally.

Dr. Horst was a member of many professional societies in addition to APS: International Society of Plant Pathology, International Society of Horticultural Sciences, American Association for the Advancement of Science, Committee Tissue Culture Association.
and the Society of American Florists. He received a Distinguished Citizen Award in 2000 from Massillon Washington High School, from which he graduated in 1953. He also was recognized in 1996 by Sigma Xi Gamma Sigma Delta with a medal from The Warsaw Agricultural University for “contributions to the faculty and the college”.

Professor Horst is remembered by his students for the trust he put in them, the hospitality that he and his wife offered, and the social gatherings that tempered the hard work he expected. His colleagues recall his excellent winemaking skills and his enthusiastic participation in Rotary International, the Cornell Gourmet Club, and a local softball league.

Dr. Horst is survived by his wife of 52 years, Hope Thorn Horst (BS HEC ’81), a daughter and three sons, and a number of grandchildren—one of whom, Maddie Turner, is currently a student in the ILR class of ’22.

Written by Magdalen Lindeberg, Margery L. Daughtrey, and George W. Hudler
Kavous Keshavarz

October 28, 1938 – January 7, 2021

Kavous Keshavarz, professor of Poultry Nutrition Emeritus in the Department of Animal Science at Cornell University, died January 7, 2021 in Atlanta, Georgia. He was 82.

Born in Iran in October 28, 1938, he received his bachelor’s degree in agriculture from Pahlavi University in Shiraz, Iran in 1961. He received a master’s from Reading University in the U.K. in 1965, and a doctorate in poultry nutrition from the University of Georgia, U.S.A. in 1971. Throughout his graduate school years and until 1978, he returned to Iran to teach animal science at Shiraz University (formerly Pahlavi University), where he rose to the rank of associate professor and dean of students. He loved sharing the cutting-edge information he was learning in the U.S. with his eager students in Iran. In 1978, he brought his young family to Georgia for what was to be a 1-year sabbatical. The timing was auspicious, for that year marked a turning point in the Iranian Revolution and made return to Iran so dangerous that it was impossible. As an exile from his birth land, he sought and received political asylum in the U.S. and began his life anew. Although those early years were trying, he and his family worked to assimilate to the culture, customs, and
language of a new home, while trying to maintain what ties they could with family and loved ones in Iran. From 1978 to 1981, he was a postdoctoral researcher at the University of Georgia, where he conducted research on poultry nutrition, and studied the effects of temperature fluctuations on heat production and energy efficiency in broiler chickens.

Dr. Keshavarz joined the Department of Poultry and Avian Science of Cornell as an assistant professor with responsibilities in applied nutrition research and extension. He was promoted to associate professor in 1988. When the Department was disbanded in 1991, he relocated to the Department of Animal Science where his research efforts continued and his extension responsibilities, because he was the sole remaining person from an original group of four people, had broadened well beyond the area of nutrition. He was promoted to full professor in 1998.

His research was on maximizing egg production and egg quality of laying hens while minimizing the use of costly ingredients such as phosphorus and protein. His studies on minerals, eggshell quality, and acid-base balance had helped define the requirements of laying hens for phosphorus and illustrate the impact that more acidogenic minerals could have on egg production and eggshell strength. The results of his research on mon- and di-calcium phosphate in which the monocalcium phosphate was found to be depressing of egg production for reasons that appeared to relate to acid-base balance was particularly illuminating in this regard. Dr. Keshavarz’s studies on calcium, phosphorus and protein/amino acids for growing pullets and laying hens contributed substantially to our knowledge of poultry nutrition, which was reflected in the numerous citations of his publications in the 1994 NRC Nutrient Requirements of Poultry.

He had also explored a possibility that nutrient requirements of laying hens might vary during the day because the secretion of albumen and eggshell occurred, for the most part, at different times of the day. He carried out experiments, with tremendous personal effort, in which nutrients were provided at different dietary concentrations during the day. He attempted to reduce the wastage
of nutrients by providing selected nutrients at varying dietary levels that would match varying physiological needs. These unique studies did not yield the intended result, but that did provide a large amount of information about the effect of within-day feeding regimens on various aspects of layer performance.

Minimizing dietary excesses of nutrients that were relevant to environmental pollution had been a continuing interest to Dr. Keshavarz. He had investigated amino acid supplementation of low protein diets, lowering dietary phosphorus levels, using enzyme supplements to improve phosphorus bioavailability, and variations in nutrient needs within the daily cycle of egg formation. His research productivity and contribution were impressive when his appointment was 70% extension and 25% research (5% instruction). Up to 1999, three years before his retirement, he had published in the U.S. (excluding his publications in Iran) 39 referred journal papers, 177 extension reports, fact sheets, and bulletins, and 75 other articles.

Dr. Keshavarz was a key extension leader for the New York State and Northeast poultry industry. Among his many activities, he interacted with feed companies, nutrition consultants, and producers, and helped formulate poultry feed and solve production problems faced by New York poultry producers. One example was that he performed research on velvet leaf that represented a response to a specific problem of a New York egg producer. His program provided a model for integrating applied research and extension to address important stakeholder issues. He chaired the Cornell Poultry Conference from 1993 to 2002 and served on many poultry-related regional and national committees. Up to 1999, he gave 132 oral presentations: 57 at scientific meetings and 75 at extension meetings. He was an excellent speaker in front of his audiences, and answered questions with enthusiasm and in such a way that promoted an understanding of many concepts in poultry science and management. He was a poultry scientist that had a working knowledge of both basic and applied poultry nutrition and dedicated his professional endeavor to researching important problems and conveying the findings through his publications, presentations, and
interactions to the poultry industry. He was a member of the American Institute of Nutrition (now American Society for Nutrition), the Poultry Science Association, and Editorial Boards of Poultry Science Journal and Journal of Applied Poultry Research.

Dr. Keshavarz was well recognized and respected by his colleagues. Dr. Richard E. Austic, chair of former Department Poultry and Avian Science at Cornell, commented: “Dr. Keshavarz was a person of inexhaustible energy and enthusiasm for research and poultry extension. He worked long hours to carry out an active extension program and to create time for his research activities”. Another former colleague, Professor Emeritus Gerald F. Combs, Jr. commented: “I (and I believe most others) knew Kavous to be eminently likeable, enthusiastic, and knowledgeable re the nutrition and management of both broilers and laying hens. He was grounded in the practical aspects of the feed and physical management of poultry and, was highly regarded by the New York poultry industry.”

“Professor Keshavarz was widely respected both within the Department of Animal Science and more broadly in the poultry industry for his productive applied research and extension program related to poultry nutrition and management,” said Tom Overton, chair and professor in the Department of Animal Science, in the College of Agriculture and Life Sciences.

“He devoted himself to his roles and worked extremely hard in his office and laboratory,” said Xingen Lei, professor of animal science, whose office was next door to Keshavarz’s. “He performed numerous large poultry nutrition experiments with his technician at the Cornell Poultry Teaching and Research Farm and he was actively engaged with the poultry producers and feed companies.”

Dr. Keshavarz retired in 2002 and moved with his wife and daughters to Westchester, New York. Retirement afforded him an opportunity to partake in activities he had long put off in the service of his professional responsibilities. He was a prolific reader of all things related to his field and beyond, taking a particular interest in
the political upheaval in the Middle East that had so dramatically changed the course of his life. He became a passionate supporter of the liberties afforded in this country, a marked contrast to the near-totalitarian regime that had taken over Iran. A moment of great personal pride to him was when he became a naturalized citizen of the United States. In the last few years of his life, he returned to Athens, where he had first established himself professionally, and which had always held a special place in his heart.

He survived by his ex-wife, Tannaz Keshavarz, daughters Sandra Kesh (vice president and practicing infectious disease physician at Westmed Medical Group in Westchester County, New York), and Sally Kesh (a corporate litigator who lives in Westchester with her husband Darren), and two grandchildren Luke and Layla Kesh-Heil.

Written by Xingen Lei, Richard E. Austic, and Gerald Combs, Jr.
Warren Knapp, professor emeritus of meteorology and climate in the Department of Earth and Atmospheric Sciences, and the second director of Cornell’s Northeast Regional Climate Center, died October 3, 2020 in Ithaca. He was 82.

Knapp brought engineering skill to the study of weather and climate, finding sophisticated and precise ways to measure and record day-to-day and annual fluctuations in temperature, radiation, precipitation, and pollution. He gathered hard data to document global warming. From the late 1970s to the late 1980s, he managed Cornell’s acid rain monitoring program, part of the National Atmospheric Deposition Program, as he documented acid rain in Adirondacks and the brown cloud hovering over Denver.

Knapp came to Cornell in January 1969 as an assistant professor of atmospheric sciences in the College of Agriculture and Life Sciences’ Department of Agronomy.

Throughout his career at Cornell, he taught students the core mathematical principles of atmospheric thermodynamics,
hydrostatics and dynamics. His popular Atmospheric Physics class taught students the physics behind such atmospheric phenomena as rainbows, haloes, and mirages.

In 1988, Knapp became the second director of the Northeast Regional Climate Center (NRCC) at Cornell. He modernized the university’s Game Farm Road weather station from manual to electronic observations and oversaw the climate center’s growth and operation until his retirement in 2001.

Under his directorship, the NRCC transitioned its accessible climate information from paper data sheets to internet availability. His scientific papers focused on applications of climate information in agriculture and long-term statistics of precipitation and snowfall.

Radio and television meteorologists relied upon data obtained from the Northeast Regional Climate Center.

Atmospheric science graduate students, postdoctoral researchers, faculty colleagues and family all looked forward to his annual winter solstice party. On the longest, darkest night of the year, he brought cheer with his quiet, charming demeanor. Continuing a tradition from his graduate school days, he assembled a group to toast the sun with a warm cup of Swedish glugg.

This winter solstice ritual never failed to bring the sun back to the Northern Hemisphere, his colleagues said.

Warren Willard Knapp was born in Fort Dodge, Iowa, in 1938, and grew up in Decorah, Iowa, and LaCrosse, Wisconsin. His parents were Willard B. Knapp and Shirlee Mather Knapp, and he graduated from LaCrosse Central High School in 1956. He began his college studies in electrical engineering at LaCrosse State College and transferred to the University of Wisconsin-Madison, where he changed his major to meteorology and met Jeanette Dudley, his wife of 59 years.

Subsequently, Knapp earned his bachelor’s (1960), master’s (1963)
and doctoral degree (1969) all at the University of Wisconsin-Madison.

Knapp is survived by his wife, Jeanette, and their three daughters, Laura Knapp of Washington, D.C.; Sara Nicolls of Naples, Florida, and Solebury, Pennsylvania; and Cecily Spencer and her husband Nathan of Gloucester, Massachusetts, and their children, Calvin, Hope, and Jason Spencer.

Written by Blaine Friedlander
Originally published in the Cornell Chronicle on November 5, 2020
Isaac Kramnick, eminent historian of political thought, legendary teacher and advisor, and exemplary University citizen, died on December 21, 2019, at 81. Kramnick joined the faculty in 1972, became Richard J. Schwartz Professor of Government in 1983, and retired in 2015, after 43 years at Cornell. Even as his scholarship earned him recognition as a fellow of the Royal Historical Society and member of the American Academy of Arts and Sciences, Kramnick also had a lasting impact on the educational mission of the University: as Cornell’s first Vice Provost for Undergraduate Education, he was a driving force behind the West Campus House System and the New Student Reading Project. A tireless advocate for his students and advisees, he insisted that Cornell live up to its highest ideals. He lived a scholarly and engaged public life with decency, integrity, and clarity of moral vision.

Kramnick was raised by foster parents in Millis, a small agricultural community outside Boston. His impoverished upbringing in a family of conservative Orthodox Jewish farmers did not necessarily presage academic success, but after graduating from a small public high school, Kramnick became the first member of his family to attend
college. As a scholarship student at Harvard, Kramnick met two teachers, Judith Shklar and Stanley Hoffmann, who inspired him to pursue a life of scholarship, and showed him the power of clear, lucid prose. Kramnick graduated summa cum laude from Harvard in 1959, writing a thesis on radical British political philosopher William Godwin. He pursued graduate study at Cambridge and then as a doctoral student in Government at Harvard, where he wrote a dissertation under Shklar’s guidance on opposition Tory politician and influential “country” republican political philosopher, Henry St. John, 1st Viscount Bolingbroke. A revised version appeared three years later as Bolingbroke and His Circle: The Politics of Nostalgia in the Age of Walpole (1968); this widely praised book earned Kramnick (who had previously taught at Brandeis and Yale) a tenured appointment in 1972 at Cornell. He was promoted to full professor in 1975.

Both Bolingbroke and His Circle and Kramnick’s second book, The Rage of Edmund Burke (1977) displayed his gift for understanding prominent figures in the history of political thought who were hard to classify in conventional ideological terms. Bolingbroke had been the leading extraparliamentary opponent of Walpole’s Whig government in the 1720s and 1730s, but was attacked after his death as an Enlightenment radical by no less than Edmund Burke—only to be elevated alongside Burke into the “Tory pantheon” in the nineteenth century. Many commentators saw this as a symptom of Bolingbroke’s unprincipled opportunism and lack of philosophical depth. For Kramnick, however, it pointed to the uncertain situation of Britain itself in a period marked by the disruptive emergence of a new economic order, led by finance rather than landed property; Bolingbroke thus appeared as a subtle, realistic kind of conservative who wished neither to keep everything as it was, nor to escape into romantic dreams of a bygone era. In The Rage of Edmund Burke, too, Kramnick set out to show that his subject was more complex than most readers recognized, particularly the postwar Anglo-American conservatives who celebrated Burke as an “inspirational hero.” Here, Kramnick employed a more provocative psychological approach, appealing not to unsettled socio-economic conditions but to Burke’s inward “ambivalences” (about his place in society, about
his sexuality, and about the relative values of independent self-assertion and receptive submission) to make sense of his curious combination of enthusiasm and anger toward the now more firmly entrenched “bourgeois” world he encountered.

This world came to the center of Kramnick’s attention in the next phase of his research, focused on writers who had embraced the heady mix of religious dissent, reverence for work and entrepreneurship, scientific rationalism, and disdain for inherited privilege that he called “bourgeois radicalism.” Supported by a Guggenheim Fellowship and a term at the Center for Advanced Study in the Behavioral Sciences, Kramnick developed a distinctive view of the shape of Anglo-American political thought across the eighteenth century, partly by studying individual thinkers like Godwin, Paine, Price, and Priestley, and partly by studying the ideological operations of whole genres of writing, like children’s literature, in industrializing England and in British North America. This work had a lasting impact on the study of Anglo-American political thought not least because it bucked the trend of historical scholarship. Beginning in the late 1960s, Bernard Bailyn, J. G. A. Pocock, and Gordon Wood, among others, had questioned the conventional understanding of the political ideology of the American Revolution as an extension of a “liberal” individualist and rights-centered strand of British political thought represented by John Locke, focusing instead on the significance of “republican” ideas about civic virtue and corruption drawn from the early modern reception of classical Greek and Roman sources. Without denying its power, Kramnick argued that this new “republican synthesis” overlooked the resurgence of interest in Locke in Britain and America after 1760, as well as the emergent ideology of a newly self-conscious and assertive group of middle-class radical reformers, which played a powerful part in the arguments leading to American independence, and in the “Great National Discussion” around the ratification of the Constitution. Kramnick’s collected essays on these subjects, published as *Republicanism and Bourgeois Radicalism* (1990), was probably the most influential of his books, and—to judge by the controversy it aroused—the one whose polemics most stung their targets. And for readers who did not doubt the existence
of a persistent liberal strand in Anglo-American thought but saw it as little more than a rationalization of inequalities of private property, the book was also a powerful reminder that, in the eighteenth century, liberalism—whatever its limits—was “still subversive of the status quo.”

Republicanism and Bourgeois Radicalism marked Kramnick’s decisive pivot toward the United States: subsequent essays in the history of American political thought appeared as introductions to editions of The Federalist Papers (1987) and Tocqueville’s Democracy in America (2003; 2007), culminating in the remarkably ambitious and comprehensive collection of primary texts he edited with his Cornell colleague Theodore Lowi in 2009: American Political Thought: A Norton Anthology. In the 1990s, Kramnick also began to undertake substantial research projects with co-authors. With British Labour MP Barry Sheerman, he wrote an acclaimed intellectual biography of socialist theorist and Labour Party activist Harold Laski (1993). With his Cornell colleague R. Laurence Moore, he wrote two books exploring the deeply contested history of secularism in American political life. The Godless Constitution: A Moral Defense of the Secular State (1996) argued that, conservative claims notwithstanding, America was not conceived as a “Christian nation” but as a bold constitutional experiment in “Godless” political secularism; the book mounted a lively, learned historical defense of American religious freedoms, including freedom from religion. In Godless Citizens in a Godly Republic: Atheists in American Public Life (2018), Kramnick and Moore focused less on the secular worldview woven into American institutions than on the powerful religious forces in American public life that have resulted in the treatment of atheists as “dangerous people and unworthy citizens,” and often in their loss of basic rights and liberties. Together, these books illuminated the depth of the political fissures over religion that still animate contemporary culture wars.

Devoted as Kramnick was to scholarship and to writing—he once said that “there are few euphoric highs, sheer ecstatic joys, that compare with how one feels after a good day of writing”—he was also a legendary teacher, whose courses, including “American
Political Thought from Madison to Malcolm X,” drew hundreds of students each semester for decades. An outstanding, engaging, funny lecturer, Kramnick took his students seriously as full participants in an ongoing conversation about political ideas. He received a Clark Distinguished Teaching Award in 1978, and nearly two decades later was voted “Cornell’s Favorite Professor” in a poll sponsored by the Cornell Daily Sun. He also defended their rights and interests, individually and collectively, within the University. He worked tirelessly on behalf of students in a variety of administrative roles at Cornell, most consequentially as chairman of the West Campus Residential Life committee between 1998 and 2005, which overlapped with his service as Vice Provost for Undergraduate Education. As The New York Times noted in 2007, the integration of academic and residential life that Kramnick shepherded into existence “represented something of a revolution, not just at Cornell but across the country.” These administrative roles, however, did not deter Kramnick from criticizing the institution, as he did during the 1980s campaign to end the investment of the University’s endowment in companies doing business with apartheid South Africa. As his colleague and co-author Glenn Altschuler said on the occasion of Kramnick’s retirement in 2015, Kramnick was “the kind of university citizen who demands that Cornell aspire to, act as, and become its best self,” and who was willing to “speak truth to power” in pursuit of that goal. That intense but never naively uncritical commitment to the institution carried back over into Kramnick’s scholarship, as he co-authored The 100 Most Notable Cornellians with Glenn Altschuler and R. Laurence Moore (2003), and Cornell: A History, 1940-2015 with Altschuler (2014).

Beyond his remarkable professional accomplishments, Kramnick took his greatest joy in his beloved family and his close friends, with whom he made Ithaca a home for almost 50 years. Kramnick’s deep love for his wife Miriam Brody, and his devotion to their children Rebecca, Jonathan, and Leah—and, later, to their grandchildren Madeline, Anna, Samuel, and Milo—was undeniable to anyone who knew him. Kramnick’s gratitude to the place where he and his family made their home was visible in ways large and small. At the end of Republicanism and Bourgeois Radicalism, Kramnick offered...
one final bit of evidence for his view of the American founding as a moment of “paradigmatic pluralism,” in which the voice of John Locke echoed alongside those of Aristotle and Cicero. “My corner of the American text, in upstate New York,” he wrote, “was settled by Revolutionary War veterans in the last decades of the eighteenth century. When they named their parcels of the American landscape, they knew in what tongues to speak. There is a Rome, New York, and an Ithaca, and a Syracuse. For state builders fascinated with the founders of states, there is a Romulus, New York. There is a Geneva, New York, at the foot of Seneca Lake and ten miles from Ithaca there is even a Locke, New York. Such is the archaeology of paradigms,” Kramnick concluded, “far above Cayuga’s waters.”

*Written by Jason Frank and Patchen Markell*
Walter F. LaFeber was born in Walkerton, Indiana, on August 30, 1933, and he died in Ithaca, New York, on March 9, 2021. He is survived by his wife of 65 years, Sandra Gould LaFeber, their two children, Scott and Suzanne, and three grandchildren.

Walt earned his B.A. at Hanover College in 1955, his M.A. at Stanford University in 1956, and his Ph.D. at University of Wisconsin in 1959. He joined the faculty of the History Department at Cornell University in 1959 and taught here until he retired in 1999 as the Marie Underhill Noll Professor of American History. The university brought him out of retirement from 2002 to 2006 to teach as the Andrew H. and James S. Tisch Distinguished University Professor.

With Walt’s death, the United States lost one of its preeminent historians. A profound critic of modern American foreign policy, Walt’s work was as provocative as it was widely read and appreciated. He authored or co-authored eleven books, edited four, and published dozens of articles in journals and anthologies. A few of his publications deserve special mention.
Walt’s trajectory began with his first book, the award-winning *The New Empire: An Interpretation of American Expansion, 1860-1898* (1963), which significantly reinterpreted the advent of U.S. imperialism. Expansion was not thrust upon the United States, Walt wrote, it was planned, and the reasons were not idealist in nature, but economic. Imperialism was meant to solve the domestic crises produced by the Second Industrial Revolution.

Just three years after publishing his first book, Walt produced his second, *America, Russia and the Cold War* (1966). In it he wrote of the adverse effects of American imperialism at home: the growth of unchecked presidential power and the increased temptation to use military force to solve foreign problems—issues very much with us to this day.

After Walt’s first few decades of teaching at Cornell, he drew upon his experience and made use of his analytical and interpretive skills to reach a general audience in a textbook, *The American Age: U.S. Foreign Policy Abroad and at Home Since 1750* (1989). Despite its sophistication and critical stance, which are by no means common features of textbooks, it was, as one reviewer noted, sprightly, accessible, and full of “color, passion, and lucidity.”

Walt’s studies of American foreign relations led him to probe deeply into the history of more than one region of the world. In his influential 1983 book, *Inevitable Revolutions: The U.S. in Central America*, he argued that the wars in Central America were the inevitable consequence of a system of “neo-dependency” imposed on the region by the United States since the beginning of the twentieth century. Republican and Democratic administrations alike had supported right-wing dictators in El Salvador, Nicaragua, and Guatemala, and had turned a blind eye to the abuses of oligarchs and their paramilitaries because these political actors helped safeguard U.S. economic, military, and strategic interests in the region. The revolutions of the 1970s and 1980s, then, were not the consequence of Soviet and Cuban meddling, as the Reagan administration argued, but “the class-ridden remains of the Spanish empire turned into the
revolution-ridden parts of the North American system.” *Inevitable Revolutions* appealed not only to specialists in U.S. foreign policy and Latin American studies, but also to general readers who wanted to understand the historical context for the Contra war and the Iran-Contra scandal of the 1980s. The book won the Outstanding Book Award of the Gustavus Myers Center for the Study of Bigotry and Human Rights.

In 1997, Walt once again extended his geographical reach – this time across the Pacific in *The Clash: U.S.-Japan Relations Throughout History*. For this book, Walt used (translated) Japanese sources, and once again provided a strong synthesis of disparate historical materials. The book won the American History Association’s prestigious Bancroft Prize for American History and the Ellis Hawley Prize of the Organization of American Historians. *In The Clash*, as in books throughout his career, Walt showed that trenchant criticism, analytical acuity, archival accuracy, and interpretive sweep could all be made accessible, graceful, lively, and even entertaining.

The last book that Walt published in his prolific career, *Michael Jordan and the New Global Capitalism* (1999), is not his most celebrated work, but *Michael Jordan* may have been his most original and prescient one. It was a “history of capitalism” more than a decade before that became identified as a field. It was an early study of what we now call the “U.S. in the World” rather than diplomatic history or the history of foreign policy. It was a work of sports history, when that was seen as a niche and unprestigious field. It was also a cultural history, at a time when diplomatic history rarely mixed with that emerging approach. All in all, the book marked departures not only in subject matter (sports, celebrity, business history) but also in chronology because it focused on the contemporary period much more than Walt’s previous body of work had done.

In this book, Walt asked important and difficult questions: What are the politics of companies like Nike that brand themselves as promoting a healthy lifestyle, but depend on what some would
consider to be unsavory corporate practices? How can we describe the politics of an athlete, like Michael Jordan, who strove during his prime to be studiously apolitical? In what ways does Jordan—and other athletes with big endorsements who try to remain above the fray—qualify as political? In the very recent history of Nike, Walt thought he had glimpsed the future of global capitalism. And the more than two decades since the publication of his book have proven him correct.

In the course of writing these and other books, Walt attracted a large following, and he was recruited to serve as a leader of professional organizations and as a commentator in the media. From 1971 to 1975, he became a member of the U.S. Department of State’s Historical Advisory Committee (serving as the committee’s chair in 1974), and he helped to supervise the publication of the influential series *Foreign Relations of the United States* (FRUS). In 1999, he was elected president of the Society for Historians of American Foreign Relations (SHAFR). In addition, he served on scholarly editorial boards, including *Diplomatic History* and the *Political Science Quarterly*; gave lectures at universities around the world; and made a number of appearances on radio and television, including *American Presidencies*, hosted by Walter Cronkite, *American Experience* on PBS, and *End of the Cold War*, on BBC-TV.

While widely influential outside Cornell, Walt was known at Cornell most of all as a teacher. He was renowned for leading lively seminars and giving students close individual supervision, and his most famous class was a lecture course, History of American Foreign Relations. He scheduled this course to meet on Saturdays as well as Tuesdays and Thursdays long after other faculty members at Cornell had ceased to teach on Saturdays. Even though he held the course on this seemingly unpopular day, his enrollments were consistently high – regularly in the hundreds. Some of his students recalled that, ironically, he drew even bigger crowds on Saturdays than on Tuesdays or Thursdays because on Saturdays so many students took their dates and other weekend visitors to see him lecture.
Walt was famous for his dramatic delivery. At the beginning of every lecture he wrote a simple outline on the blackboard, and then he talked nonstop without consulting any notes or prompts of any kind. In the course of lecturing, he never hesitated, groped for words, or slowed down. Students found his rapid pace exhilarating. As one remarked, “You had to be careful never to drop your pencil.” Every time Walt offered this course at the end of the final lecture he received a standing ovation.

At each stage of his career, Walt received recognition for his outstanding teaching. In 1966, when the Clark Teaching Award was introduced in the College of Arts and Sciences, he became its first recipient. In 1976, the year of the bicentennial, when Cornell broke with tradition by having a faculty member rather than the president deliver the commencement address, President Dale Corson invited Walt to give it. In 1994, when the Stephen J. Weiss Presidential Fellowship was created to honor the most outstanding undergraduate teachers throughout the university, Walt was the first to be chosen for this high honor. On September 14, 2001, three days after the terrorist attacks of 9/11, the one faculty member that President Hunter Rawlings selected to address the crowd of 12,000 who gathered for a vigil on the Arts Quad was Walt. In 2002, when the first Andrew H. and James S. Tisch Distinguished Professorship was introduced as a means of coaxing Cornell’s most outstanding teachers into continuing in the classroom rather than retiring, Walt became the first to hold this prestigious position.

In 2006, when Walt retired from teaching, he gave a farewell lecture as retiring professors often do. But so many of his former students expressed interest in attending that it was scheduled to be held not in a Cornell lecture hall but rather in the American Museum of Natural History in New York City. And when this location also proved to be too small to accommodate the demand, Walt’s lecture was moved to the Beacon Theater in New York City, where more than 3,000 Cornell graduates packed the house to hear Walt one last time. As their devotion suggests, Walt surely ranks among the most beloved professors at Cornell in his own time and perhaps in all time.
Professor Emeritus of Mathematics George Roger Livesay passed away on August 1, 2020 in Ithaca after a long illness. He was 95.

Roger (the name he went by) was born on December 9, 1924 in Ashley, Illinois, a small town in the far south of the state. He earned his B.S., M.S., and Ph.D. degrees in Mathematics from the University of Illinois at Urbana-Champaign in February, 1948, August, 1948 and 1952 respectively. Roger’s area of research was topology, the study of malleable shapes in all dimensions. His Ph.D. thesis, titled *Extensions of the Notion of the Unicoherence with an Application to Mappings of Spheres*, was supervised by David Bourgin. He was an instructor at the University of Michigan from 1950-1956 and then joined Cornell as a research associate with Mathematics Professor Paul Olum, working on homotopy theory. He was rapidly promoted up the ranks, to assistant professor in 1958, associate professor in 1961 and full professor in 1965. From 1979-1981 he served as associate chair and director of undergraduate studies. He retired in 1997.

Much of Roger’s research centered on fixed-point-free finite order
maps on manifolds. In 1960, he proved that every order 2
automorphism without fixed points of the 3-sphere is standard,
namely after a re-parametrization, it is simply a combination of
rotations or reflections. This work was published in the Annals of
Mathematics and settled a question dating back decades, building on
the work of P. Smith, R.H. Bing and Montgomery-Zippin. In 1963,
Roger extended his theorem to show that order 2 automorphisms
with 2 fixed points are also standard. The general case of
automorphisms of order greater than 2 was only resolved 40 years
later when G. Perelman proved Thurston’s Geometrization
Conjecture in 2003.

Roger wrote a number of papers with fellow Cornell topologists and
geometers, including Israel Berstein and David Henderson. He also
wrote three papers with former Cornell Professor William Browder.
One of these papers answered the following question affirmatively
for odd n bigger than 3: Given a fixed-point free involution T of an
n+1-manifold M, is there a smoothly embedded n-sphere S in M
such that T(S)=S?

Roger was an avid photographer and played the violin very well. He
was also an outstanding tennis player, winning at the Tompkins
Count Men’s Single Open tournament from (at least) 1957-1960,
including a 1959 win over another Cornell Math Professor, Gilbert
Hunt. In 1962, Roger competed in the U.S. Men’s Clay Court
Championship in Chicago, Illinois, succumbing to legend Rod Laver
6-4, 6-3. He was particularly proud of his performance in this match
with the superstar who was 14 years his junior.

He is survived by his wife Beverly of almost 70 years, his children
Jonathan, Christopher, David, Jennifer and Elizabeth, his sister
Elizabeth and 9 grandchildren and 2 great-grandchildren.

Written by Ravi Ramakrishna (chair), Ken Brown, and Jason
Manning
Alison Lurie, Whiton Professor of English, emerita, died in Ithaca on December 3, 2020, at the age of 94. Professor Lurie was among the most widely published and celebrated authors in the Department of Literatures in English, where she taught literature, folklore, humor, and writing for nearly four decades. Her many honors included Guggenheim and Rockefeller Foundation grants, the American Academy of Arts and Letters Award in Fiction, and a D. Lit. from Oxford University. She was also awarded the Pulitzer Prize for her 1984 novel *Foreign Affairs*, and France’s *Prix Femina Étranger* in 1989 for *The Truth About Lorin Jones*.

Professor Lurie was born in Chicago, Illinois on September 3, 1926, and grew up in White Plains, New York. Her family history is summarized in an obituary published December 6 in the Washington Post: “Her father was a sociologist and a founder of the Council of Jewish Federations and Welfare Funds. Her mother edited the book and magazine sections of the Detroit Free Press before her marriage. Her parents, both socialists, sent her to a progressive coed boarding school, the Cherry Lawn School in Darien, Connecticut, from which she graduated in 1943. She received a bachelor’s degree four years...
later from Radcliffe College, the women’s college that was sister school to Harvard.”

In the 1940s, Professor Lurie published her first stories and poems; in 1948 she married her first husband, Harvard Ph.D. and eventual Cornell Professor Jonathan Bishop, a literary critic, poet and author of books on philosophy and religion. While raising their three sons, Professor Lurie helped found an experimental theater arts group in Cambridge, Massachusetts, and eventually completed her novel Love and Friendship, which launched her career in fiction. She arrived at Cornell with Professor Bishop in 1961, and began her Cornell teaching career in 1969, where she designed courses in folklore and children’s literature, subjects previously seen as outside the purview of the department. She was one of a group of women instructors who joined forces to fight for recognition and promotion at Cornell and was among the first women to be tenured by the Department of Literatures in English. Professor Lurie and Professor Bishop divorced in 1985.

In 1995, she married novelist Edward Hower, who survives her. Professor Lurie is also survived by her three sons—John Bishop of Nashua, New Hampshire, Jeremy Bishop of Blanco, Texas, and Joshua Bishop, of Sydney, Australia—as well as her sister, three nieces, two step-children, and three grandchildren.

Professor Lurie was best known inside and outside Cornell for her satirical novels, which combine mordant wit and sharp character observation with empathy and compassion. In these comedies of manners, artists, academics, and other small-town figures lose their way in life, upsetting their marriages and upending their careers. Her first novel set in central New York—a common setting for her work throughout her career—was Imaginary Friends (1969), which lampooned the sexual and spiritual mores of the 1960s via a small-town cult of UFO worshippers. Among the most locally celebrated of her books is The War Between the Tates, a 1974 novel set in Corinth, a fictionalized Ithaca, and its eponymous university. The book satirizes the vanities and foibles of professors and ‘townies’, and upon its publication elicited curiosity and consternation among
Ithacans who believed they might have served as inspiration. Professor Lurie’s subsequent novel *Foreign Affairs* has, as its protagonists, an unmarried Corinth professor of children’s literature and her younger male colleague, who separately undergo romantic and intellectual misadventures in Great Britain. That book is one of the few comedies ever to have been awarded the Pulitzer Prize for Fiction.

In addition to her career as a novelist, Professor Lurie was a prolific essayist who published books on the subjects of clothing, houses, and children’s stories. *The Language of Clothes* (1981) explored the way women’s lives throughout history influenced their mode of dress, and how women’s clothes reinforced or exploded gender roles. *The Language of Houses* (2014) gave a similar treatment to architecture, showing the way our dwellings reflect and compel our lives. Professor Lurie’s other nonfiction titles collect and analyze ghost stories and stories for children, two subjects of her perennial fascination that strongly influenced her fiction writing. Her final book, 2019’s *Words and Worlds: From Autobiographies to Zippers*, collected 21 essays ranging in subject from theater and art to fashion and, in one piece, the nature of literary criticism.

Students, Cornell faculty, and local writers remember Professor Lurie as wise, witty, and supportive, an exemplary teacher and colleague, and an excellent conversationalist whose enthusiastic presence was a staple of literary events in Ithaca. An obituary in the Ithaca Journal elaborated: “Alison was known for her warmth, sensitivity, and cheerfulness, both in her writing and in her personal relationships. She loved folk music and Mozart and enjoyed country-western concerts at upstate county fairs.”

Many of Professor Lurie’s students have gone on to enjoy their own success as writers, including Melissa Bank, Juno Diaz, Lorrie Moore, Micah Perks, and Julie Schumacher. Alison Lurie is remembered fondly and much missed both at Cornell and around the world.

*Written by Stephanie Vaughn and J. Robert Lennon*
William G. McMinn, Dean of the College of Architecture, Art and Planning (AAP) at Cornell University from 1984 to 1996, died in Asheville, North Carolina, on August 21, 2020, at the age of 89.

"Bill McMinn's contributions to the stature of the college cannot be overstated," says Meejin Yoon, Gale and Ira Drukier Dean of AAP. "As a founder of the Cornell in Rome program that has grown to become a vital component of our architecture, art, and planning students' education, he enriched the lives of so many. Bill was a prolific practitioner, educator, and scholar of design and though his expansive career extends well beyond our college, his influence continues to be felt at the core of our values and culture at AAP."

In addition to the founding of Cornell in Rome, Bill McMinn's accomplishments as dean include the establishment of the undergraduate program in the Department of City and Regional Planning. And, as Trustee Emeritus Robert H. Abrams observes, "Bill had a significant role in the establishment of the Cornell Baker Program in Real Estate. He welcomed the concept of an interdisciplinary program housed in City and Regional Planning
with courses contributed from several colleges across the university. I doubt the program could have launched or survived without his enthusiastic support and encouragement." McMinn also strengthened many of AAP's graduate programs with increased support funding and helped launch a five-year fundraising campaign focused on facilities, endowments, and the upgrade of educational technology.

Bill McMinn's deep attachment to Rome developed when he had a fellowship at the American Academy in Rome in 1982. When he became dean at AAP, he formed an international college board of advisors to set up the Cornell in Rome program, which opened in 1986. Bill gave the program his careful oversight, navigating various crises, and leaving it with a solid foundation for the future. As Professor Emeritus of planning William Goldsmith observes: "When the Rome program felt seriously threatened, Bill bluntly announced an imminent shutdown. As he anticipated, students were outraged and "occupied" the dome gallery space. What could a poor dean do? He immediately submitted to "negotiation," the three department chairs formed a governing committee, and as Bill also anticipated, problems were quickly ironed out, and the program thrived."

Bill was firmly convinced that Rome, this most ancient and complicated of cities, is the ideal laboratory for the disciplines of architecture, art, and planning. Many colleagues, recalling Bill's contributions, concur that his founding and support of Cornell in Rome was a capital achievement. Architect Robert Joy, a former member of the Dean's Advisory Council, recalls, "What I remember most about Bill were his warmth and boundless energy. His love of Rome was infectious. You couldn't help but be swept away by his enthusiasm." For Victor Kord, former chair of the Department of Art, "Cornell in Rome owes its very existence to Bill's passion for all things Roman: its history, culture, and complexity. He wanted to share this with the students and faculty of the college." Don Greenberg, the Jacob Gould Schurman Professor of Computer Graphics shares, "I do believe that his most important contribution was the initiation of Cornell in Rome. I am sure that many of us who were able to take advantage of the program are thankful for its
existence." Artist and Professor Emerita Kay WalkingStick recalls: "I remember that he was supportive of his faculty, he knew a bit about Cherokees (few people do) and he had a lovely elegance about him….he always seemed above the fray. What we truly shared was a deep love of Rome." Professor Emeritus in architecture Kent Hubbell shares: "I have fond memories of Bill McMinn that go back to 1993, when I returned to Cornell after 18 years at the University of Michigan. A true southern gentleman, he welcomed me back to Cornell, and provided warm support as I adjusted to Cornell and my new role as department chair." Urban designer and Professor Emeritus Roger Trancik joins the chorus: "Bill McMinn was an excellent professional administrator in his position as dean and at the same time a personable colleague, showing a high level of respect for the faculty. This was on full display in the Spring of 1991, during the Gulf War, one of the four semesters I taught at Cornell in Rome. He carefully weighed the various concerns and options and kept the program operating during this challenging time. Bill McMinn made a significant contribution to departmental collaboration and managing the Rome program. He should be highly recognized for this extremely successful endeavor."

Bill McMinn was born in Abilene, Texas, received his B.A. in 1952 and his B.Arch. in 1953 from Rice University, and his M.Arch. in 1954 from the University of Texas, Austin. He began his teaching career at Texas Tech University, moving on to Clemson University, Auburn University, and Louisiana State University.

He was the founding dean of the Mississippi State University School of Architecture from 1974 to 1984 when he joined Cornell as dean of AAP. Following his 12-year period at Cornell, he was named founding dean of the School of Architecture at Florida International University in 1997. At FIU, he initiated the international design competition that brought Bernard Tschumi to create the school's new building. Ever a proponent of study abroad programs, Bill noted that "the immersion into a foreign culture, even for a short time, provides an important measure of one's own values, [and an opportunity] to grow intellectually, professionally and personally."
In addition to his teaching and administrative career, Bill McMinn practiced professionally from 1968-71 in Asheville, North Carolina. He was appointed in 1980 to the National Architectural Accrediting Board (NAAB), of which he became president three years later. During his tenure, NAAB procedures were reformed, and he chaired NAAB team reviews of 24 architecture programs.

Bill McMinn was selected as a Fellow of the American Institute of Architects in 1980. In addition, he was the recipient of the ACSA's Distinguished Professor award in 1991.

Having retired from FIU in 2004, Bill McMinn was awarded in 2006 the Topaz Medallion for Excellence in Architectural Education by the AIA Board and the Association of Collegiate Schools of Architecture (ACSA). In nominating McMinn, John McRae, FAIA, stated, "Bill McMinn has, throughout his career, served as a strong bridge between practice and education. His vision has always been to provide a seamless transition between the two realms...with thoughtful, engaging, and productive action, while serving with humility and grace."

The Topaz Medallion jury commented: "The breadth of Bill McMinn's educational accomplishments demonstrates a level of continued excellence and innovation that is truly exceptional...Such a leader inspires not only students and faculty but the community. We have endless admiration for what he has done."

After his retirement from academic life, Bill McMinn continued to advise on projects and architectural design competitions. Settling in Asheville, Bill and his wife Joan continued to travel extensively, especially to the city they loved best, Roma.

Cornell architectural historian and Professor Emerita Mary Woods offers the following elegant synthesis: "Like so many American artists and architects, Bill McMinn was an Italophile. He founded AAP's now treasured Rome study program, projecting students and faculty into worlds beyond Ithaca. Bill created and nurtured programs in Texas, Mississippi, Ithaca, and Miami, Florida as well
as Rome. Wherever he was, Bill always cut an elegant figure, evident in any photograph of him. This surely was yet another legacy of the many years he spent in his beloved Rome. When he and his wife Joan went to Florida International University in 1997, they fell in love with the city's diversity and cosmopolitanism. The main living space of their early Arquitectonica house was a perfect cube set in the lush greenery of Coconut Grove. It elegantly summarized the arc of Bill's many careers and passions: Renaissance geometries; tropical modernism; and Cornell's iconic design problem of the square."

Bill McMinn is survived by Joan, his wife of 64 years, along with their daughter, Tracey.

Written by Jeffrey Blanchard and the McMinn Family
Michael Darwin Morley

September 29, 1930 – October 11, 2020

Professor Emeritus of Mathematics Michael Darwin Morley passed on October 11, 2020 at the Robert Packer Hospital in Sayre, Pennsylvania after a short illness. His wife Vivienne passed in 2013. He is survived by his niece, Heide Lee of Houston.

Michael was born on September 29, 1930 in Youngstown, Ohio. He grew up in a family of limited means and was considered a slow learner at first. When he was 5 years old his family discovered he needed glasses and he then began to outpace his peers, eventually gaining admission to the Case Institute of Technology and graduating with a Bachelor’s degree in 1951. He went on to the Ph.D. program in mathematics at the University of Chicago, which at that time was perhaps the strongest in the world.

At Chicago, mathematical logic then was considered “philosophically very interesting but mathematically not very deep,” Michael once wrote. His initial thesis attempt was met largely with indifference by a faculty that had no specialists in the algebra of logic. He earned his M.S. degree in 1953. Facing an uncertain academic future Michael worked from 1955-61 as a mathematician.
for the University’s Laboratories for Applied Sciences, contributing to aeronautical research.

While at Chicago Michael met fellow math grad student Vivienne Brenner. The two married during graduate school. The University’s nepotism rules permitted only one of them at a time to be a paid graduate student. Vivienne earned her Ph.D. there in 1956.

Michael finally found a mentor in Professor Robert Vaught at the University of California at Berkeley. Vaught helped Michael develop the dissertation that cemented his 1962 Ph.D. and would be published as “Categoricity in Power” in the Transactions of the American Mathematical Society in 1965. This paper ended up being transformative and changed the entire character of the subject in which he was working, allowing it to flourish for decades to come. Just a few weeks after his retirement in 2003, this paper earned Michael the Leroy P. Steele Prize of the American Mathematical Society for a Seminal Contribution to Research. The citation described Michael as having set in motion “an extensive development of pure model theory by proving the first deep theorem in this subject and introducing in the process completely new tools to analyze theories (sets of first-order axioms) and their models”. The paper is still cited on a yearly basis. In it, Michael introduced the notion now known as Morley rank, a term that appears in the titles of over 130 papers. It is a means of measuring the size of a subset of a model of a theory, generalizing the notion of dimension in algebraic geometry.

After earning his Ph.D., Michael was an instructor at the University of California at Berkeley from 1962-63 and assistant professor at the University of Wisconsin from 1963-67. He joined Cornell as an associate professor in 1967 and was promoted to professor in 1970. He served as associate chair and director of undergraduate studies from 1984-1990 and 1991-95. He was also president of the Association of Symbolic Logic from 1986-89. He became professor emeritus on January 1, 2003.

Michael’s devotion to students was very well-known at Cornell and
in the larger community – the Morley Prize, awarded to an outstanding mathematics senior at Ithaca High School, is named in his honor. His approach to advising undergraduates centered on patience and empathy. In 1995-96 he received the Robert A. and Donna B. Paul Advising award from the College of Arts & Sciences. The award is intended “to honor undergraduate advisers who make a difference in the lives of their Cornell students.” Some staff members referred to him as “Uncle Mike” because of his kind and genial manner. One commented on the “many stressed and emotional undergrads who sought counsel and left his office calm and smiling.” Indeed, the interaction with Michael that left a truly indelible impression on one of us was when he described his greatest achievements as saving students. From the conversation it was clear that he meant not just saving them academically, but literally rescuing students who were in severe distress. Michael’s motto was “At Cornell, we like students”.

Below is an obituary that Michael wrote for himself some years ago. It captures his humor and upbeat attitude very well.

After a cowardly and whining struggle, Michael Morley succumbed on October 11, 2020. He was predeceased by his wife Vivienne, who for over fifty years, treated him better than he deserved. Michael was a person of limited intelligence and talents. However, he used what he had fairly well. Surprisingly, he established some significant mathematical results. More important, on several occasions, he was helpful to other people, especially students. He was seldom malevolent or hateful. He was invariably happy and cheerful; though this often indicated he did not really understand the situation. We hope the Good Lord, in his Infinite Mercy, will forgive Michael for his very numerous sins and admit him to the Kingdom of Heaven.

Written by Ravi Ramakrishna (chair), Anil Nerode, and Richard Shore
Yuri Orlov was an extraordinary human being: an indefatigable human rights activist and a highly productive scientist of renown. He was born August 13, 1924 and passed away September 27, 2020.

He graduated from high school in 1947 after a six-year interruption for war service as a worker in a T-34 tank factory and as an artillery officer in the Red Army.

After university, he became a graduate student and employee of the Institute for Theoretical and Experimental Physics (ITEP) in Moscow. As a result of giving a pro-democracy speech there in 1956, he was fired, publication of his Ph.D. thesis was blocked for two years, and his employment as a physicist in Moscow was blocked for 16. He left Moscow to do physics in Armenia. Upon returning to Moscow in 1973, he found work as a physicist, helped organize the Soviet branch of Amnesty International and wrote his famous ”Letter to Brezhnev” in defense of Andrei Sakharov, arguing for political and economic reforms. In retaliation, he lost his job and had to subsist as a private tutor. Three years later, he founded and became first head of the Moscow Helsinki Group,
which monitored Soviet adherence to the human rights provisions of the 1975 Helsinki Accords between the Soviet Union and the West. In 1977, he was arrested and sentenced to 12 years of hard labor and exile in Siberia. In 1986, he was stripped of Soviet citizenship and deported to the U.S. as part of a prisoner exchange. This was partly a result of pressure from the widespread international “Free Orlov” movement among scientists and science organizations, which was spearheaded by the Scientists for Sakharov, Orlov, Sharansky (SOS) group cofounded by LBNL’s Sessler and Pripstein. Ronald Reagan received Orlov at the White House on October 7, 1986 only days after his arrival in the U.S.. Orlov then traveled around the U.S. and Europe for the next several months, lobbying heads of state and delegates to the Vienna Conference on Security and Cooperation in Europe, to bring attention to the remaining Soviet political prisoners. He arrived at Cornell in 1987.

As an undergraduate student at the Physical-Technical Institute in Moscow, Orlov studied under Kapitsa, Landau, Budker, and Berestetsky. As a graduate student at ITEP, he worked on the design of a proton synchrotron and did original work on accelerator theory, notably describing the non-linear motion of particles in terms of Hamiltonian perturbation theory known from planetary motion. After his employment in Moscow was blocked in 1956, he went to study and work at the Yerevan Physics Institute (YPI) in Armenia. There he received his first Ph.D., did the theoretical design of the accelerator to be built at YPI, and wrote many highly original papers on accelerator theory. These contained some of the earliest work on quantum radiation damping and excitation of particle oscillations in accelerators, and also on the dynamics of beam polarization. He was elected a corresponding Member of the Armenian Academy of Sciences and became a Professor at YPI in 1970. In parallel to his work at Yerevan, Orlov was also engaged in work at the Budker Institute of Nuclear Physics (BINP) in Novosibirsk, where he received his second Ph.D. in 1963. In Novosibirsk, he participated in the design of colliding beam accelerators, the first of which came into operation in 1963. Finally back in Moscow, but forbidden to work at ITEP and Moscow University, he was employed 1972-73 at the Research Institute of Terrestrial Magnetism and Dissemination
of Radio Waves in the Moscow region. At this point his story moves to the human rights activity described above.

In 1987, Orlov arrived at Cornell as a Senior Scientist, where he would conceive of many ingenious improvements to the Cornell accelerator over the years. Shortly after his arrival, he became involved in – and would go on to make original contributions to - a complex experiment at Brookhaven National Laboratory to measure the magnetic moment of the Muon with extremely high precision. He also spent a year (88/89) as a visiting scientist at CERN, the European Laboratory for Nuclear Research. In 1993, he became an American citizen. In 2008, he was appointed professor of Physics and Government at Cornell, becoming professor emeritus of Physics in 2015. In the same year, he joined another extremely difficult experiment to make precision measurements of the electric dipole moments of several fundamental particles looking for departures from expected values and for fundamental symmetry violations in nature.

Prior to his arrest in 1977, he co-authored 50+ scientific papers in leading journals and proceedings, as well as 40 human rights documents and appeals. While in labor camp he authored two scientific papers, several human rights appeals and a document on the situation of prisoners and forced laborers in the Soviet Union, all of which were smuggled out, largely on snippets of cigarette paper, and published in the West. After his arrival at Cornell he co-authored another 100+ scientific articles and numerous technical reports. His autobiographical memoir “Dangerous Thoughts” was published in the U.S. (1991), Russia, Germany, France, and Ukraine.

Orlov received several human rights awards including the Carter-Menil Human Rights Prize, The Human Rights Award of the International League of Human Rights, and the American Physical Society’s (APS) Nicholson Medal and its Andrei Sakharov Prize. He was a member of the American Academy of Arts and Sciences and a fellow of the American Physical Society. In 2020, Orlov was awarded the APS Robert R. Wilson Prize for Achievement in the
Physics of Particle Accelerators just a few days before his death.

Yuri Orlov’s achievements as a giant of human rights as well as a leading scientist in accelerator physics made his life unique and much to be admired.

Written by M. Tigner, C. Csaki, and G. Hoffstaetter
Thomas W. Parks
March 16, 1939 – December 24, 2020

Professor Thomas (Tom) W. Parks passed away on December 24, 2020 at the age of 81. He served on the faculty of the School of Electrical and Computer Engineering from 1986 until 2008. While at Cornell and Rice, he authored over 100 books and papers and supervised 22 Ph.D. and 18 M.S. students. Along with his pioneering contributions to Digital Signal Processing, Tom was noted for his good humor and ready smile; he will be sorely missed.

Tom was born on March 16, 1939 in Buffalo, New York to Mildred W. and William K. Parks. He received all of his degrees – the B.E.E. ('61), M.S. ('64) and Ph.D. ('67) – from Cornell’s School of Electrical Engineering. Tom’s thesis advisor was the late James Thorp, a long-serving faculty member and former director of the School of ECE. Jim had many glowing things to say about Tom’s student career, and at least one telling anecdote. Upon reading a draft of Tom’s thesis, a math professor refused to sign off on the thesis until Tom proved an off-hand comment. It took a year, but Tom proved it.

After receiving his Ph.D., Tom accepted a faculty position at Rice
University, where he taught and conducted research for twenty-one years. He returned to Cornell ECE as a faculty member in 1986, conducting research, teaching, and providing professional service until his retirement in 2008.

Tom made significant contributions in the areas of time-frequency and wavelet analysis, signal reconstruction, array processing for sonar and seismic applications, digital filter design, pattern classification, and neural networks. His first major research contribution (1972) was the development of what is now known as the "Parks-McClellan Algorithm," a technique developed with his Rice Ph.D. student, James H. McClellan for the fast and reliable design of digital filters. Their paper "Chebyshev approximation for nonrecursive digital filters with linear phase" is a classic that has been cited well over a thousand times. The Parks-McClellan Algorithm is still the design method of choice and is cited in most textbooks on the subject of filter design. James McClellan went on to a distinguished career at Georgia Tech, where he is credited with the development of that school’s strong signal processing program.

Tom made many other major contributions in the formative years of digital signal processing. He was recognized at the 1996 International Conference on Signal Processing as one of the pioneers in the field. President Gillis of Rice University presented "The Rice Award" to Tom and Dean Sidney Burrus (Rice) at "The First 30 Years of DSP" conference, held in February 1999. Tom was also co-recipient (with James H. McClellan) of the IEEE Jack S. Kilby Signal Processing Medal in 2004 “for fundamental contributions to digital filter design and interpolation, especially the Parks-McClellan algorithm.”

Tom was elected Fellow of the IEEE in 1982 for his development of signal processing algorithms and for leadership in education. He is the recipient of an IEEE Third Millennium Medal, which was presented at the IEEE International Conference on Image Processing in Vancouver, Canada in September 2000. Tom was also a Senior Fulbright Fellow and received the Alexander von Humboldt Foundation Senior Scientist Award. He was elected to the U.S.
Tom was also noted for his professional service, making significant contributions to the IEEE Signal Processing Society through his early activities as an ADCOM (Administrative Committee) member, his service as associate editor of the Transactions, as distinguished lecturer, and as a member of the Digital Signal Processing Technical Committee of the Signal Processing Society.

Tom was recognized both locally and nationally for his excellent teaching. The IEEE Acoustics, Speech, and Signal Processing Society appointed him as a "National Lecturer" for 1987-88 and a "Distinguished Lecturer" in 1988-89. He developed and taught courses for Mathworks on Matlab and on the use of Matlab in signal processing. He was a member of an NSF sponsored group (CASPER) for developing software for signal processing education. He is one of five co-authors of *Computer-Based Exercises for Signal Processing Using MATLAB* (Prentice Hall 1994). He also wrote a successful textbook at the senior level, *Digital Filter Design*, with C. S. Burrus based in part on his lecture notes for what was then EE425, "Digital Signal Processing," a course he developed when he first joined the Cornell ECE faculty.

Tom received the Ruth and Joel Spira Excellence in Teaching Award in the School of Electrical Engineering in 1992 and the Dean's Fund Award in 1995. He always had a high teaching load because of the popularity of EE425, the EE course that enjoyed the highest enrollment beyond the sophomore year. He completely restructured the laboratory in EE425 in the fall of 1991 by introducing Matlab and Texas Instruments DSP development systems.

Tom Parks will be remembered for his outstanding contributions to research, professional service and teaching. He was, in many ways, an ideal colleague.

*Written submitted by Stephen B. Wicker (chair), C. Richard Johnson, and Clifford Pollock*
Richard Polenberg (Dick to his friends and colleagues) died at the age of 83 on November 26, 2020. It was Thanksgiving Day, an appropriate reminder of the gratitude owed to him by his colleagues and by the many thousands of Cornell students he taught. Born on July 21, 1937, Professor Polenberg grew up in New York City where one of his proudest memories was working as an intern for Mad Magazine. He received his Ph.D. in 1964 from Columbia University under the direction of William Leuchtenburg, a distinguished scholar of the New Deal and a Cornell alumnus. Before coming to Ithaca in 1966, Professor Polenberg taught at his alma mater Brooklyn College.

Professor Polenberg’s career at Cornell spanned 46 years. Chair of the History Department from 1977 to 1980, he became the Goldwin Smith Professor of History in 1986. When he retired in 2012, he was the Marie Underhill Noll Professor of History. Professor Polenberg loved Ithaca and did not relish travel. The world that most contented him stretched from his spacious home on Orchard Place to his offices in McGraw Hall and Sterling Library. Nonetheless, he traveled, however reluctantly, to lecture at other universities in the
United States and abroad. In 1988-89, Professor Polenberg served as the Fulbright Visiting Professor at Hebrew University in Jerusalem.

Those are the bare facts of his career. They do not do justice to his legendary role as a teacher of undergraduate and graduate students or to his influence as a historian of twentieth-century America. He lectured, without notes, to classes exceeding an enrollment of 1000. Only Bailey Hall had adequate seating. He loved his small seminars as well, which were always oversubscribed. Professor Polenberg was determined to learn and remember that names of the Cornellians who took his classes. It helped that a large number of them kept in touch with him after they graduated and sought him out over reunion weekends. He received the Clark Teaching Award very early in his career, and later was honored as a Stephen H. Weiss Presidential Fellow.

For Professor Polenberg, teaching was a stimulus to his work as a scholar. His publications began with a study of the New Deal, Reorganizing Roosevelt’s Government (1966). His next book grew from his interest in anarchism and in free speech. Fighting Faiths, The Abrams Case, the Supreme Court Speech (1988) won the American Bar Associations Silver Gavel Award. A continued interest in constitutional history, joined to an interest in American Judaism, resulted in The World of Benjamin Cardozo. Personal Values and Judicial Process (1997). Professor Polenberg joined these monuments of scholarship to publications that sought a broader audience. Combining his powers of synthesis to his gift for narration, he produced War and Society, The United States, 1941-1945 (1972); One National Divisible: Class, Race and Ethnicity in the United States since 1938 (1980); and with Professor Walter LaFeber, another renowned Cornell teacher and historian, The American Century. A History of the United States from 1890 to the Present (1975). The latter, in two volumes, is now in its seventh edition.

Professor Polenberg’s interest in teaching and scholarship did not end with his retirement. He became an enthusiastic participant in Cornell’s teaching project at the Auburn Correctional Facility.
Letters addressed to him from incarcerated students were as appreciative as those he received from Cornell students. They were to him a source of great pride.

In retirement, he also pursued his life long interest in blue grass and American folk music, especially music of political protest. A skilled guitarist and banjo player, combined with his soft voice, led, almost by chance, to an opportunity to sing and play with Pete Seeger at the latter’s home on the Hudson River. It was only appropriate that his last book, published in 2015, was *Hear My Sad Story: The True Tales that Inspired “Stagolee,” “John Henry, and other Traditional American Folk Songs.*

His final book underscored Professor Polenberg’s talent for telling a captivating story. That ability was clear whether he was bringing alive a historical incident or relating an event in his own life, like the time he met former vice president Henry Wallace or introduced Alger Hiss to a large Cornell audience.

Those who knew Professor Polenberg will always remember his calm kindness, his wit, and his fierce integrity. Part of his nature was a determination to defend those whom he saw as victims of injustice, whether it was Emma Goldman, J. Roger Oppenheimer, or an undergraduate subjected to sexual harassment.

For many years Professor Polenberg played tennis, and he liked to win. That did not keep him from regularly calling his opponent’s ball “in” when it was clearly “out.” He was stubborn, and that was a weakness. It was more than compensated by the strongest component in his makeup. That was empathy.

Almost every Saturday, he could be seen at Temple Beth-El in Ithaca, where he served three terms as its president. Devoted to his family, he is survived by Joan Speilhotz, his wife of 27 years, his four children, and his seven grandchildren.

*Written by Larry Moore*
Professor John William Reps of the Department of City and Regional Planning (CRP) died November 12, 2020, age 98. John established a remarkable record as a teacher, scholar, and author. He had a tremendous impact on his many students, Cornell, and the world of city planning.

Born on November 25, 1921 in St. Louis, John grew up in Springfield, Missouri. He entered Dartmouth College in 1939 where he majored in geography and swam for the Big Green. He was in the stands at Hanover on November 16, 1940 when Dartmouth and Cornell played their legendary “Fifth-Down Game.” His honors thesis presented a land use plan for Hartford, Vermont. That work led to a summer job with the National Resources Planning Board -- a federal agency charged with examining land and resource issues across the country. In 1943, John graduated from Dartmouth summa cum laude and Phi Beta Kappa.

When he left college, the United States was at war. John spent 1943 to 1946 in the Army Air Corps, rising to the rank of sergeant. While stationed at Buckley Field, Colorado, he completed an evening
course on city planning taught in Denver by the prominent architect and urban planner Carl Feiss. He attended the Air Corps’ Radio School and subsequently worked in the Army Airways Communications Service headquarters in Asheville, North Carolina.

John became a student again when Cornell’s spring term began in March 1946. Just out of uniform (as so many were at that time) he and seven others formed the University’s first class seeking master’s degrees in city and regional planning (MRP). He always valued highly the breadth and depth of his graduate work and repeatedly emphasized the great influence that Professor (later Dean) Thomas Mackesey had on him. Producing a master’s thesis entitled “Ideal Cities,” he completed his MRP degree in 1947.

John then spent a year at the University of Liverpool studying urban planning in Britain. Back in the United States, fortune smiled when he was asked to give a talk on the Marshall Plan in hometown Springfield. At the event he met Constance Peck, an assistant professor teaching French at Drury University. They were married in 1948.

From 1948 to 1950 John served as planning director for Broome County, New York. He was also a CRP Lecturer, driving to Ithaca to give classes in planning law and housing. He returned to England in 1950-1951 to pursue graduate studies in public administration at the London School of Economics.

Accepting Tom Mackesey’s offer of a faculty position, John’s career as a planning professor began in January 1952. Upon arrival he became CRP’s only full time faculty member (remaining so until 1957) and department chair (a position he held until 1964). Immediately he began teaching Principles of City and Regional Planning, a required course for first year MRP students and fourth year Architecture students. Principles, along with his many other courses, quickly established John’s reputation as a teacher whose vibrant, highly informative lectures were illustrated with wonderful slides and filled with humor. For decades returning planning and architecture graduates would recall “Reps’ lectures” with fondness.
and admiration.

In 1964, John established a business, Historic Urban Plans, and then ran it until 1994. Accurately sensing a market for visual depictions of cities and towns, he published hundreds of city and town plans, “birds eye views” of communities, and historical maps. The venture flowed from what had become the central focus of his research and writing: i.e., the history of city planning. The business continues to flourish in Ithaca.

John was a skilled and prolific writer, producing many papers, journal articles, book chapters, and exhibition catalogues. In his earlier years his publications concentrated on planning history, planning law, and zoning administration. Soon he began writing books. Those works, and then decades of lectures flowing from them, established John as the leading expert on the history of city and regional planning in the United States.

He became in time a major authority as well on urban planning history in other countries, including Australia and Great Britain.


And what books they were! A pleasure to read, they featured detailed but easy to follow text interspersed with captivating maps, pictures, and diagrams. Each book reflected meticulous research and John’s apparently endless capacity to find and use details to tell large, multi-faceted stories. Each reflected his ability to convey ideas clearly to specialists and a broad public audience. Each
reflected his boundless enthusiasm for the subjects investigated.

Many honors came John’s way, far too many to list here. From its initial publication *The Making of Urban America* was seen, in one reviewer’s words, as “a seminal text that will have been read by cohorts of planners on both sides of the Atlantic.” The American Historical Association awarded John the Beveridge Prize in 1980, selecting *Cities of the American West* as the best book that year in American history. In 1984, he received the Association of Collegiate Schools of Planning’s second biennial award for Distinguished Service to Education in Planning. In 1996, the American Institute of Certified Planners named John a “National Planning Pioneer.” The Institute’s handsome bronze plaque, mounted in West Sibley’s first floor hallway, labels John “the father of American planning history.” He received fellowships from the Guggenheim Foundation, the Fulbright Program, the National Endowment for the Humanities, and the Australian National University. In 1985, the University of Nebraska awarded him an honorary doctorate. Visiting professorships and lectureships took him to positions in several universities across the United States and in Hong Kong, Beijing, Salzburg, and The Hague. This past June the University of Notre Dame’s School of Architecture honored John posthumously with its Henry Hope Reed Award, the jury’s citation reading in part: “The results of his extraordinary scholarship and urbanist advocacy … are quietly embedded in … buildings and places throughout the United States and around the world.”

Notwithstanding the laurels, John’s life revolved around his family. Connie and John’s very strong union lasted until her passing in 2009. Their children, Martha and Thomas, added much to that journey. While John’s research and writing consumed many a Saturday morning. The afternoons and Sundays were family time. Winter’s Sunday afternoons often found them skating at Lynah Rink, and in warmer months the Ithaca Yacht Club was a favorite place. For some years, John and son Tom sailed in the Star races on Cayuga Lake, and for more than twenty years after his racing days ended, *The Reprise*, a twenty-seven foot sailboat, captured Cayuga’s winds and carried family and friends on many outings. John and
Connie sat for many years, among Schoellkopf and Lynah’s faithful, cheering on the Big Red football and hockey teams.

He never stopped working. After retiring from the faculty in 1987, John graced Sibley Hall through more than three decades -- putting in full days, continuing his research, and publishing more books. Wherever one found him, he was always a source of warmth, wisdom, and wit – in his office, the lunchroom, or a lecture hall after another (always eagerly anticipated) “Reps talk.” He was particularly inspiring for young CRP faculty members. In his nineties he gave a number of talks in Ithaca and elsewhere about French Bastides, medieval towns he first visited and photographed in 1951 and then kept studying through trips to France over nearly sixty years. During March and April 2019 John treated Sibley inhabitants and visitors to a superb, final exhibit “Mapping the New York Metropolis, 1624 – 1864.”

In reviewing Cities of the American West, a British professor said in part: “This book can only be described in superlatives. It is exhaustively researched, brilliantly presented, and stunningly illustrated. It is a tour de force, fascinating in both its wealth of detail and breadth of canvas.” The same words capture much about John as an academic, an author, and a person --- always the knowledgeable and patient teacher who spoke and wrote with professionalism and excitement; always the artist who captured the entire forest and the individual trees; and always the master storyteller whose sweeping narratives flowed over the years, and eventually across generations and centuries.

A feather duster hangs beside that Sibley Hall plaque. With his always irrepressible humor, John brought the duster to the plaque’s unveiling and charged department chairs with the ongoing responsibility for sweeping away the inevitable dust. Dust or no dust, John Reps was one of Cornell’s brightest stars, and he will long be remembered.

Written by Richard S. Booth, Thomas J. Campanella, and Porus Olpadwala

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Sidney (Sid) Saltzman passed away on September 23, 2020, at Kendal of Ithaca at age 94.

Born to immigrant parents and raised in Connecticut, Sid enlisted in the U.S. Navy during WWII after graduating from high school. As part of the U.S. Navy's V-12 college training program (designed to supplement the force of commissioned officers in the Navy during World War II), he earned a Bachelor of Science in Mechanical Engineering from Purdue University in 1946. After his service, he remained in the Naval Reserve while employed as an engineer by Combustion Engineering, Inc., in New York City and later as an industrial engineer by the Renwal toy company in Mineola, New York.

Sid married his beloved wife, Lory, in 1950. After completing a Master of Science degree in Industrial Engineering at Columbia University in 1951, he was recalled to Naval service, this time on a small minesweeper, the U.S.S. Tumult. A serious injury sustained aboard ship while operating in rough seas ended any thoughts of a Navy career. Sid then returned to his civilian career, working at
Royal Typewriter Company. When Royal merged with McBee, he worked for Royal McBee in Port Chester, New York, developing software for Royal McBee's LGP-30, an early commercial computer, and he resumed studying at Columbia.

In 1958, Sid was offered an opportunity to teach at Cornell, so he, Lory, and their two young children moved to Ithaca, where he studied operations research, earning a Ph.D. in Industrial Engineering in 1963. Sid sometimes claimed that this was unintentional - having tired of his job, he accepted a position as a teaching assistant at Cornell, only to learn on arrival that being a Ph.D. student was part of the deal.

Intentional or not, it turned out well. Sid remained at Cornell until his retirement. He joined Cornell's Industrial Engineering faculty after receiving his Ph.D., serving as an assistant professor until 1968 and as associate director of the Office of Computer Services from 1966 to 1968. As his research evolved toward economics, Sid found a better fit in Cornell's Department of City and Regional Planning and moved to that department as an associate professor in 1968. He became a full professor in 1971, the year the department split into two. In 1974 Sid became chair of one of them: the Department of Policy Planning and Regional Analysis. He played a leading role in reunifying and reorganizing the two departments in 1976 to form the present Department of City and Regional Planning. He became chair of that department and remained in that position until 1983. He was named professor emeritus in 2009.

Sid is considered one of the pioneers of regional science, the quantitative analysis of regional economic and social systems. He was instrumental in creating Cornell's Graduate Field of Regional Science in 1972 and worked throughout his career to strengthen the program. His research interests focused on econometric modeling, economic development, and public policy analysis in both the United States and abroad. He published research on these and related topics in numerous scholarly journals, professional reports, and two books: *The Future of Electrical Energy: A Regional Perspective of an Industry in Transition*, with Richard E. Schuler.
Sid was a lead developer of an econometric model for New York State and was recognized for his work forecasting energy policy impacts, using the New York State model to predict energy demand for the New York Power Authority. Forecasts made with the model successfully predicted that the demand for energy in the state would decrease, indicating that further construction of power plants was unnecessary. (A version of the model, developed by Sid and Dick Schuler, is still used by the Washington, D.C.-based NGO Resources for the Future to conduct research on energy demand.)

Sid also spent a sabbatical modeling energy policy impacts as a Senior Research Fellow for Mathematica Policy Research, Inc., in Washington, D.C. His work in econometric and energy modeling was supported as well by the U.S. Department of Energy, National Consumer Law Center, New York State Public Service Commission, New York State Consumer Protection Board, and the New York State Energy Office. He taught, lectured, and consulted on managing regional finance and other matters internationally, including in Indonesia, Israel, Kenya, Russia, Puerto Rico, Italy, Trinidad, and England. He received additional funding from the National Science Foundation, NATO, the Fulbright-Hayes program, and the Department of Energy. Sid co-organized significant conferences and workshops on energy planning, large-scale social science models, regional science, and spatial econometrics, and was a regular contributor to the department's Seminar in Regional Science, Planning, and Policy Analysis.

Sid's teaching encompassed courses in quantitative methods and modeling, including statistics, econometrics, input-output analysis,
social accounting matrix models, regional science, and quantitative public policy analysis. He loved working with students and helping them achieve their academic goals, and he enjoyed hearing from them as they established themselves after leaving Cornell. In discussing his teaching philosophy, Sid remarked, “I’ve focused my teaching and research on the application of quantitative methods for a variety of reasons. I believe all students should develop a basic understanding of how to use various quantitative techniques not necessarily because they will use them in their own professional and research work but because they will need to protect themselves (and their clients) from the intentional and/or unintentional incorrect use of these techniques by others.”

A chair or member of many dissertation committees, Sid was particularly supportive of Ph.D. students. Cornell Professor Emeritus of Economics Erik Thorbecke recalls that, in admission-to-candidacy exams and dissertation defenses in which he was present, “Sid was invariably cool, calm and collected towards the students. Compared to other examiners, he was relatively quiet and gentle. His questions and interventions were always fair. At times, one got the impression that he was trying to help put students at ease and perhaps even become their advocate rather than their critic. He always carried himself with an inner humility that endeared him to students and colleagues.” Illinois Institute of Technology Social Science Professor Yuri Mansury recalls how Sid helped him as a Ph.D. student to find the confidence to become an independent researcher and instilled in him an appreciation that academics have a moral obligation to help the underprivileged. Professor Mansury notes that Sid’s deep sense of fairness led him to conduct research on such topics as gender wage inequality and the impacts of extreme weather events that affect people of low socioeconomic status disproportionately.

Iwan Azis, adjunct professor in Cornell’s Charles H. Dyson School of Applied Economics and Management and former student and colleague of Sid, observed that Sid’s abiding sense of fairness made him a most valuable partner in a research team Professor Azis coordinated at the University of Indonesia to formulate policies for
regional finance that would simultaneously meet the goals of fostering regional growth and reducing interregional inequality.

Sid’s devotion to education was not confined to Cornell. He was honored and exceptionally pleased to be appointed by Governor Mario Cuomo to serve on the Board of Trustees of Tompkins Cortland Community College. In all endeavors, Sid always hoped to improve the lives of others.

Sid loved people, both working with people and being with people. He supported and appreciated theater, music, and opera, taking in many summer performances at Glimmerglass. Always happy to meet new people and make new friends, he most enjoyed close relationships, celebrations, travels, and time spent with family, friends, and colleagues near and far. His warmth and kindness touched all who came in contact with him.

Upon learning of his passing, Technion-Israel Institute of Technology Professor Emeritus Daniel Shefer and his wife Elaine, whom Sid and Lori had graciously hosted during a sabbatical year at Cornell, remarked that Sid was “not only a credit to academia but to the human race.”

Written by Kieran Donaghy, Lori Saltzman, Erik Thorbecke, Yuri Mansury, Iwan Azis, and Daniel and Elaine Shefer
Harold A. Scheraga

October 18, 1921 – August 1, 2020

Harold A. Scheraga, the George W. and Grace L. Todd Professor Emeritus of Chemistry in the College of Arts and Sciences, who had a profound impact shaping the understanding of protein structure, died August 1, 2020 in Ithaca. He was 98.

Scheraga’s career stretched across seven decades and resulted in more than 1,300 publications. Even after he retired in 1992, he maintained a robust research program that many of his peers and students would struggle to match. His most recent paper was published in June.

“It’s amazing to think that Harold’s career has spanned the history of the entire field of modern protein chemistry,” said Brian Crane, the George W. and Grace L. Todd Professor in Chemistry and department chair. “In the 1950s, Harold conducted classic experiments on the basic hydrodynamic properties of proteins, before we barely had an inkling of their complex assemblies and activities that underlie nearly all biological processes. His work touches on nearly every aspect of protein chemistry and biophysics. He was an incredibly prolific and determined scientist who leaves a
body of work that is nearly unparalleled.”

After arriving in 1947, Scheraga (pictured here in his office) spent his entire academic career at Cornell, publishing more than 1,300 research papers and leaving an indelible mark on the field of protein chemistry.

When Scheraga began his academic career in the 1940s, proteins were still very much a mystery in the chemistry community. Scheraga initially distinguished himself by applying experimental physical chemistry to protein science, a field now referred to as protein biophysics. Scheraga’s combination of experimental and theoretical approaches showed how amino acid sequences influence the three-dimensional structure, folding pathway, thermodynamics and biological activity of proteins.

Scheraga was born on October 18, 1921, in Brooklyn, New York, to Samuel and Etta Scheraga. He spent his early childhood in Monticello, New York, where his father, a machinist, opened a store selling radios and musical instruments. Scheraga’s father lost the business after the 1929 economic crash, and the family moved back to Brooklyn. The financial strain during the 1930s was so strong that Scheraga offered to drop out of school to help support the family, but his father insisted he continue his education. Scheraga later credited the Great Depression with shaping his outlook and career aspirations.

Scheraga received his Bachelor of Science degree from City College of New York in 1941, and his Ph.D. from Duke University in 1946, after which he was awarded a one-year postdoctoral fellowship at Harvard Medical School.

Scheraga had early dreams of coming to Cornell because his father’s twin brother, Morris, attended the College of Veterinary Medicine and became a microbiologist. Scheraga himself was hired as an instructor teaching quantitative analysis in 1947; five years later, he began teaching undergraduate physical chemistry.
The connection to Cornell ran through the Scheraga family. Not long after he arrived, one of his younger brothers, David Scheraga ’53, enrolled for mechanical engineering. Scheraga’s wife of 76 years, Miriam, who died in January, worked for Cornell University Library for 30 years. All three of their children – Judith Stavis ’68, M.D. ’72, Deborah Scheraga ’70 and Daniel Scheraga ’73 – graduated from Cornell.

Scheraga became an assistant professor in 1950, associate professor in 1953 and a full professor in 1958. In 1965, he was named the Todd Professor of Chemistry.

In addition to teaching and research, Scheraga made lasting contributions to the chemistry department when he served as the department chair from 1960-67. During this period, he initiated the construction of the S.T. Olin Chemistry Research Laboratory, and he led the department’s expansion into molecular biology and materials science. Among the faculty he recruited was Jack Freed, the Frank and Robert Laughlin Professor of Physical Chemistry Emeritus, in 1962.

“I didn’t jump at the offer, but Harold, in his true style, kept after me until I accepted. It already showed me his single mindedness and focus,” Freed said. “He built up a very strong department with both senior and junior hires, and the department became one of the top 10 chemistry departments in the country. His management skills were exceptional. He was able to make strong judgments and decisions and move the department forward within the university.”

Scheraga loved to travel, but in spite of his frequent trips he was able to maintain a prodigious output of published research “Part of his secret was to use his flying time to work intensively on his manuscripts, probably just as intensively as his efforts in his office,” Freed said. “This intense work couldn’t be matched by anyone else in his research group. One of his former students confided to me that he tried to work as intensively as Harold, only to become ill.”

Over the years, Scheraga trained and mentored hundreds of graduate
students and postdoctoral researchers, and he maintained close ties with many of his former students. In 1958, as the U.S. raced to catch up with the Soviet Union’s launch of Sputnik, Scheraga was inspired by President Eisenhower’s push for more science education in public schools, and he joined the Ithaca City School District Board of Education, serving a one-year term.

Scheraga was a Guggenheim fellow and Fulbright research scholar, a fellow of the American Association for the Advancement of Science, a member of the United States National Academy of Sciences, and the American Academy of Arts and Sciences, and he received the Eli Lilly Award in Biological Chemistry, among many other honors.

The Scheraga-Burke Meeting Room on the fourth floor of the Physical Sciences Building is co-named in his honor.

He is survived by his brother, David, along with his three children, five grandchildren, and four great-grandchildren.

*Written by David Nutt*

*Photo by Patrick Shanahan*

*Originally published in the Cornell Chronicle on August 6, 2020*
Robert Seaney, Ph.D. ’55, professor emeritus of soil and crop sciences, who was known for his research on identifying the best forages for New York state soils and climate, died January 19, 2021 in Petersburg, Illinois. He was 93. Born January 23, 1927, in Fort Wayne, Indiana, Seaney served in the U.S. Army before earning his bachelor’s degree in biology from Purdue University in 1951. He received his Ph.D. in plant breeding from Cornell, and then joined the College of Agriculture and Life Sciences (CALS) as an assistant professor of plant breeding and agronomy. Seaney was promoted to associate professor in 1961.

Professor Seaney was an excellent communicator and was widely respected by colleagues, extension agents and farmers. Through his research and extension program, he had a large impact on improving forage production on livestock farms in New York state. During his 35 years at CALS, Professor Seaney collaborated closely with Professor Danny Fox to develop the Cornell University Hillside Pasture Research and Demonstration Project at the Harford Animal Science Teaching and Research Center. The goal of this project was to evaluate the potential for using the approximately 3 million acres
of underutilized and abandoned hillside farmland in New York as grasslands for grazing beef and dairy cattle.

Professor Seaney was very committed to transferring the results through his extension program to help beef and dairy cattle producers improve their profitability. From 1978 to 1990, Seaney worked to identify the best forage species for the state’s soil and climate conditions. He also spent time developing forage management practices that would better support the high productivity of grazing cattle throughout the growing season.

As part of their extension programming, Seaney and Fox held tours and field days for cattle producers to learn more about specific techniques. For example, Seaney discovered that alfalfa is more likely to survive freeze-and-thaw heaving cycles when it’s mixed into a hay stand, instead of left standing on its own — thanks to the fibrous root networks of grasses that act like a shock absorber.

Seaney retired on October 31, 1989, and was named professor emeritus in March 1990. He and his wife, Patricia, operated Seaney Greenhouses in Newfield, New York, until they moved to Illinois in 2003. He then helped his son build a state-of-the-art greenhouse, currently 20,000 square feet and home to more than 100 types of perennials and annual bedding plants.

Seaney is survived by his wife, Patricia "Pat" Seaney; four children, Roy Seaney of Tallula, Illinois, Kathy Berry of Ithaca, New York, Linda Seaney (Tom Sarchioto) of Trumansburg, New York, and Janice Seaney of Seaside, Oregon; two stepchildren, Bill Schultz of Salt Lake City, Utah, and Heidi Schultz (Matt Bellingham) of Portland, Oregon; grandchildren, step grandchildren, great grandchildren, and cousins.

Written by Danny Fox, Gary Fick, and Ronnie Coffman
Professor Emeritus Bernard (Bud) F. Stanton died September 25, 2020 at age 95. He was a member of the faculty of the Department of Agricultural Economics (now the Charles H. Dyson School of Applied Economics and Management) for 39 years, retiring in 1992. He served as department chair from 1968 to 1976. In retirement, Bud remained keenly interested in the agricultural economics profession and authored two books, one a history of the Cornell Agricultural Economics Department and the other a biography of George Warren. Moreover, he served Cornell as the part-time director of its Health Careers Office from 1996 to 2008.

His contributions to Cornell and agricultural economics were extensive and impactful. As department chair, Stanton instituted recruitment policies to diversify the graduate training of the faculty and to expand its subject matter expertise. New appointments in environmental and natural resource economics and in development economics concurrently increased strengths in econometrics and other quantitative methods. These changes were made while maintaining and improving traditional strengths in agricultural economics.
Bud’s leadership skills took other forms as well. He encouraged collegial interactions among the faculty by introducing a morning coffee time. He provided encouragement and feedback to young faculty and when he thought it was needed, critical evaluations. His teaching and publishing led by example. Although his principal subject matter area was production economics and farm management, he taught an undergraduate course in statistics, introduced an upper-division course in linear programing, and co-taught graduate courses in research methods and in price analysis.

He authored or coauthored numerous publications on farm-management related topics. The economies and diseconomies of farm size was a topic of special interest. His American Agricultural Economics Association (AAEA) presidential address “Perspective on Farm Size” (American Journal of Agricultural Economics, December 1978) highlighted the literature on the economies of size, still a timely topic with the continued increase in the average size of farms. Using survey data collected at 10-year intervals from 1907 to 2007, Stanton and his collaborators provide readers with insights into the dramatic changes in the size and productivity of dairy farms in the Town of Dryden, Tompkins County, New York (Cornell University Department of Applied Economics and Management RB 2008-02).

The breadth of his research is illustrated by the article “Seasonal Demand for Beef, Pork, and Broilers” Agricultural Economics Research XIII (1961):1-14, which received an AAEA research award in 1962. Its main objective was to compare the demands for meats in the summer with those in the winter. The paper also illustrates the influence of alternative model specifications on results. The numerous results reported are especially impressive given that they were computed on a desk calculator.

Bud’s professional work demonstrated a persistent interest in accurately accumulating, presenting, and interpreting economic data. He served on the nation’s Census Advisory Committee on Agricultural Statistics. He is the author of “Expressing Ideas with
“Tables and Charts” (Cornell Agricultural Economics AE Extension 80-26). And one could sense Bud’s distain when a seminar speaker would say “I know that those of you in the back of the room cannot read this slide, but [an excuse].”

Bud’s contributions included much service. He served as the AAEA president in 1978-79, on the editorial council of the *AJAE* and as chair of the awards committee. An active participant in the International Association of Agricultural Economists, he was responsible for organizing the 1991 meeting in Tokyo. In addition, he was active in the Northeastern Agricultural Economics Association, including service on the Executive Committee. Stanton was the CALS’ faculty representative to the SUNY Faculty Senate 1978-84 and served on the Board of Directors of the Springfield Bank for Cooperatives.

He was willing to undertake difficult assignments that offered little or no reward to himself, simply because he was aware of their importance. His contributions made a difference to his profession and society at large and led to a variety of recognitions and awards. Stanton was named a Fellow of AAEA in 1983 and an Honorary Life Member of the International Association in 1994. He received an honorary doctorate from the University of Helsinki, and he was lauded by a former rector of the Slovak College of Agriculture for fostering channels of communication and cooperation among international academics. He received an Outstanding Faculty Award from the CALS Alumni Association in 1996.

Bernard F. Stanton was born August 3, 1925 on Old Homestead Farm, Westerlo Township, New York. Growing up on a farm, Bud was active in 4-H and the local dairy club. He graduated from Greenville High School in 1942, and after working on the farm during World War II, matriculated at Cornell University’s College of Agriculture. He was president of the senior class and received a B.S. degree in 1949. He then entered the graduate program in agricultural economics at the University of Minnesota, earning M.S. and Ph.D. degrees. He also spent a year at Oxford University as an Elmhurst Scholar. He returned to Cornell as an assistant professor of
agricultural economics in 1953.

Sabbatical leaves in Washington DC, Finland, Australia, India, and Belgium enriched both his professional and family lives. He also undertook guest lectures in Japan, China, and Slovakia.

Bud was predeceased by his wife Lara of nearly 65 years. She was a native of North Dakota, and they met on a blind date in 1955 while she was attending Cornell for summer course work. They were active in St. Luke Lutheran Church where Bud sang in the choir. He is survived by three children, Margaret McNamara, Karen Clark, and Randy Stanton, six grandchildren, and a great-granddaughter.

Written by Bill Tomek, Loren Tauer, and Nelson Bills
Professor Paul Steen, an internationally recognized scholar in fluid dynamics who combined applied mathematics with experiments to provide deep insights into processes involving fluids, died in Vermont on September 4, 2020. He was 68.

Professor Steen was born on June 22, 1952 and grew up in Meadville, Pennsylvania. He received a bachelor’s degree in Engineering and another in English Literature from Brown University and then completed a fifth year of undergraduate studies at Bristol University in England. After his year in England, Paul went to Johns Hopkins University where he earned his Ph.D. in Fluid Dynamics. He spent some time as a postdoctoral researcher at Stanford University before joining the faculty of Cornell University’s School of Chemical Engineering in 1982.

In his research Professor Steen focused on questions of stability, often working with fluids at interfaces, such as droplets, bubbles, and thin films. His experiments were visually striking and his theories elegant and insightful. Professor Steen is known world-wide for a clever, switchable “spider man” adhesion device he co-
invented and patented, wherein electroosmotic pumping of liquid water droplets is used to create reconfigurable sticky surfaces. He is also known internationally for his technical contributions in the area of nonlinear dynamics. There, Professor Steen brought the method of ‘problem deformation’ or ‘homotopy’ to solve difficult problems in chemical engineering practice.

Professor Steen had a special skill for identifying basic scientific questions within important engineering contexts and carried out productive collaborations with companies, including Kodak (on printing) and Metglas (on casting of amorphous metals). He improved the rapid solidification processing of metallic alloys by planar-flow spin casting by introducing the Bessemer-meets-Gutenberg innovation. He also created a new periodic table system for classifying droplet motions. At the time of his passing, Dr. Steen was working on projects sponsored by NASA (on microgravity) and with a start-up, InCaveo (on the commercialization of a recent invention from his lab on capillary adhesion).

Shortly after his passing, his NASA collaboration was launched into orbit.

Professor Steen engaged broadly and generously with the international research community, serving as an associate editor of the Journal of Fluid Mechanics for more than a decade and co-editing “A Gallery of Fluid Motion,” published by Cambridge University Press. In 2007, Dr. Steen was awarded the Henry Marion Howe Medal for a paper he published in the journal Metallurgical Transactions. He is a fellow of the American Institute of Chemical Engineers, the American Physical Society, and the Alexander von Humboldt Foundation. In 2008, he was named the Maxwell M. Upson Professor of Engineering, an endowed position he held for the rest of his time at Cornell.

The American Society for Gravitational and Space Research has announced that they will publish a special issue dedicated to topics in Interfacial Transport Phenomena in memory of Professor Steen, who served as an associate editor for the society. This issue will
honor his work in interfacial fluid mechanics and in microgravity research.

Dr. Steen was an excellent collaborator, teacher, advisor, and mentor. He worked with dozens of co-authors, thousands of undergraduates, and many doctoral students. He understood the value of investing time, care, and effort in the people who become colleagues and who further the work of the field of chemical engineering. The alumni of his lab populate top academic and industrial positions around the globe. Notably, he always welcomed and cultivated undergraduate students through engagement in his research, often mentoring them from their freshman year through their senior year.

For thirty-eight years, Paul was a valued teacher and advisor across departments and graduate fields in the College of Engineering at Cornell. His colleagues have noted both his sharp intellect and his humility. He had a keen sense of humor and an infectious laugh. Paul was a runner, hiker, and avid bicyclist who enjoyed traveling and experiencing other cultures. He was a remarkable man who is survived by his wife, Kyra D. Stephanoff; daughters Ana and Frances; sister, Martha Steen Whitney; and brothers, Robert, John, and Rodger.

Written by Abe Stroock, Lynden Archer, and Susan Daniel
Warren Stiles was born on his maternal grandfather's farm in Green Creek, New Jersey on June 16, 1933 and farming continued to be part of Warren’s life until his death on July 28, 2019. He grew up on a farm, studied agriculture in college, became a nationally-known expert on tree fruits, and continued to farm in retirement. Warren always enjoyed being in the field as opposed to an office. He spent much of his time visiting growers across the state and collecting data in the field. For 20 years after his retirement, Warren grew all sorts of fruit, berries and vegetables at his family’s farm in Dias Creek, New Jersey. He was one of only a few growers of beach plums, a native plum found along the East Coast. Dr. Stiles was a teacher, advisor, extension educator, researcher, and church organist. He was devoted to his family, his students, and to the growers with whom he worked.

Warren earned a B.S. degree in Farm Crops from Rutgers University in 1954 and an M.S. degree in Horticulture in 1955. He received his Ph.D. degree in 1958 from Penn State University with a thesis entitled, “Effects of Growth Regulating Chemicals on Apparent Photosynthesis of Apple Leaves.” Warren's professional career
consisted of the teaching positions at Rutgers University as assistant professor of Pomology from 1958-1963; University of Maine as Extension Fruit Specialist and associate professor of Pomology 1963-1969 and professor of Pomology 1969-1980; Cornell University as associate professor of Pomology 1980-1985 and Professor of Pomology 1985-1999. He served as department extension leader for many years and taught a course on Orchard Management.

Warren was known throughout the country for his expertise on tree fruit nutrition. He made serving the tree fruit industry his priority, often dropping everything to drive to a farm to help a grower who was having problems. Warren introduced the tree fruit industry to techniques for assessing the nutrient status of trees to optimize production. He pioneered techniques to deliver nutrients to trees in precise amounts. He taught growers the importance of considering micronutrients in their fertility programs. Warren conducted research on weed management, cold hardiness, pruning practices and growth regulators. When problems would arise within the tree fruit industry, Warren would conduct experiments to find solutions then deliver that information to growers – often in person. In 1982, for example, records show that Warren spoke at 36 meetings and conferences across the State of New York. Warren was given a “golden tire” upon his retirement – a symbol of the many thousands of miles he accumulated each year while attending meetings, giving tours, and making farm visits. Warren commanded the utmost respect from growers, students, colleagues and administrators because he was not afraid to “tell it like it is.” His honesty, dedication, compassion, and hard work endeared him to all who knew him.

A former graduate student writes, “I decided to pursue graduate studies in Pomology when I was 35. The opportunity to work with Warren Stiles for my M.S. and Ph.D. projects was a primary factor in my choice of Cornell. I wanted a graduate advisor with broad mastery and experience in all the fundamental aspects of fruit production, and a profound understanding of the rural environment and family farms. Dr. Stiles offered a complete mastery of orchard
systems based on a lifetime of experience as well as applied science. He was a demanding but supportive mentor, with a tough-guy exterior (accentuated by constant plumes of cigarette smoke) but with a big compassionate heart.”

After retirement in 1999, Warren returned to the farm and continued making contributions to agriculture such as serving on the Cape May County Agriculture Development Board Farmland Preservation Program; County Board of Agriculture, of which he was a member of the Board of Directors; the Beach Plum Association; County Cooperative Extension Advisory Council; County Master Gardeners Program, County Technical School Horticulture Program Advisory Committee; New Jersey Farm Bureau; and the New Jersey Agricultural Experiment Station Board of Managers. He was also a member of the American Society for Horticulture Science, American Pomological Society, International Society for Horticultural Science, Northeast Weed Science Society and the New Jersey State Horticultural Society. Even in retirement Warren was a sought-after speaker at grower meetings.

One orchardist writes, “Scarcely a day passes as I work in my own orchards when I don’t recall something that Warren might have said about a situation or strategy to be resolved. Warren lives on as a mentor in my daily existence!”

Warren lived a full and abundant life, raising a family, contributing to the health of the tree fruit industry, mentoring students, and contributing his time and talents to his church and community. Warren is survived by his wife, Sally, his four children, three step-children, and several grandchildren.

Written by Marvin Pritts and Ian Merwin
Nicholas L. Sturgeon, Susan Linn Sage Professor Emeritus of Philosophy and Humane Letters at Cornell University, died on August 24, 2020, at Hospicare of Ithaca, from complications of Parkinson's disease. He was 77.

Nick was born in Santa Maria, California, the son of Galen H. Sturgeon, a geologist for Shell Oil, and Anna L. Sturgeon, a homemaker and later a social worker for Contra Costa County Child Protective Services. He received a B.A. from Carleton College in 1964, and a Ph.D. in Philosophy from Princeton University in 1972. In 1967, he joined the Sage School of Philosophy at Cornell as assistant professor of Philosophy. He became associate professor in 1975 and professor in 1983. He was appointed Susan Linn Sage Professor of Philosophy and Humane Letters in 2011. Nick was also a visiting professor at the University of Michigan, Johns Hopkins University, and the University of California, Los Angeles. He was awarded a Faculty Research Award in the Humanities by the National Endowment for the Humanities in 2005. He retired in 2013.
Nick served as Chair of the Sage School from 1989 to 1994. From the 1970s through 2009, he often served as either editor or editor-in-chief of *The Philosophical Review*. To mark his contribution to the high editorial standards of the *Review*, the issue published in January 2021 was dedicated to his memory. He was a member of the editorial boards of the journals *Ethics* and *Utilitas*. He served on many university committees. In the 1981-2 academic year he chaired the Writing Committee of the College of Arts and Sciences; this committee secured agreement on a wide-ranging reform of the Writing Program for first-year undergraduates.

Through his essays on ethics, beginning with ‘Moral Explanations’ (1985), Nick was a leading advocate of a position sometimes called ‘Cornell Realism’. Other advocates included his colleagues Richard Boyd and Richard Miller. While each of them defended a distinctive version of moral realism, their collaborative work helped to form the reputation of Cornell as a center of research in ethics. They attracted able graduate students who later became influential philosophers in their own right.

Nick arrived at his version of moral realism partly through seeing how the main objections to it could be answered. In his early work he argued against the non-cognitivist view that moral judgments are not capable of being true or false because they are not statements at all, but expressions of emotion or attitude. In his later work he discussed arguments that concede that moral judgments are statements but deny that they can be known to be true. According to one of these arguments, moral facts and properties that admit of moral knowledge would have to be entirely different from anything that a scientific worldview could recognize; they would have to be non-natural facts and properties. According to another of these arguments, moral facts and properties do not play the explanatory role they would play if they were real facts and properties; the best explanation of natural facts dispenses with any appeal to moral facts. Against the first of these views, Nick argued that moral facts and properties are natural; they are not strange facts or properties that are unknown to the natural sciences. Against the second, he argued that these natural moral facts and properties are explanatory of other
natural facts. Facts about possession, need, distribution, and deprivation, for instance, may constitute facts about justice. Moral facts, so understood, explain other natural facts; facts about injustice, for instance, may explain the instability of institutions.

In defending these views, Nick often applied ideas in metaphysics, philosophy of science, and philosophy of mind to ethics. For example, drawing on his work on Locke, as well as on his collaboration with, and work by, Richard Boyd, Nick explained how moral properties are both natural and explanatory. If we are asking ‘What is water?’, we are not necessarily asking ‘What does the word “water” mean?’. We may be seeking the characteristics that genuine samples of water have in common (being H2O). When moral philosophers ask, ‘What is the right?’ or ‘What makes right actions right?’; they are not confined to asking ‘What does “right” mean?’.

They can also ask what features of right actions explain their being right. Nick also exploited non-reductive physicalism in the philosophy of mind, a version of which was also formulated and defended by his colleagues Sydney Shoemaker and Richard Boyd. According to this view, even if certain physical facts, properties, and events are sufficient for the existence of mental facts, it does not follow that the study of mind can dispense with distinctively mental properties (any more than economics can be reduced to physics, even though some physical facts are sufficient for the existence of the facts that economists study). Nick argued that the same is true of moral properties (right, good, just etc.) in relation to the underlying natural properties (mentioning persons, actions, and social relations) that are sufficient for the existence of moral properties.

Nick regularly taught various courses in normative ethics (especially the debates between utilitarianism and its critics), meta-ethics (the metaphysics, semantics, and epistemology of morality), and the history of ethics. The latter included a graduate class on Hobbes and the British Moralists, which led to an influential paper on Butler on nature and conscience, as well as to a well-known paper on Hume’s ethical theory, in which Nick argued that (contrary to a popular view) Hume is not an ancestor of twentieth-century non-cognitivism but is more plausibly understood as recognizing moral facts (though
without being a moral realist).

Nick also regularly taught a course on the British empiricists, about which a former graduate student said: ‘Nick’s presentations on Locke were brilliant. He modeled the method of interpreting and mining historical texts for their significant ideas right in the classroom. … Generally, Nick would find that Locke created problems for himself by his own approach. Then he would follow Locke down the rabbit hole and come back up with all sorts of suggestive conclusions that related puzzling notions in Locke—like substance, real and nominal essences, primary and secondary qualities—in ways the reader had not before thought about’.

For many years Nick and Richard Boyd co-taught an undergraduate course on Science and Human Nature which discussed evolutionary psychology and its implications, and alleged implications, for ethics. Nick and Richard rejected any basic dichotomy between facts and values, and therefore acknowledged that scientific discoveries had ethical implications; but they encouraged a critical attitude towards the sweeping claims of some evolutionary psychologists about the moral and political implications of their discipline.

Students at all levels were impressed by his ability to present complex arguments clearly, without leaving out important details, and without losing sight of the main point. They were even more impressed by his ability to do all this without any written notes. His careful and sympathetic exposition of the case for each side of a given view made his own account all the more convincing.

In 2012, the Sage School held a conference in honor of both Nick and Richard Boyd. This resulted in a volume of essays, Moral and Scientific Realism: Essays in Honor of Richard N. Boyd and Nicholas L. Sturgeon (Philosophical Studies 172:4 [2015]), edited by Elizabeth S. Radcliffe (Ph.D. Cornell, 1985). A volume of many of his collected papers, edited by David Brink (Ph.D., Cornell, 1984), Terence Irwin, and Julia Markowitz, is being prepared for publication by Oxford University Press.
Nick was known for his intellect, patience, kindness, wit, and encyclopedic memory. One colleague remembers his "consistently sensible and illuminating voice in departmental meetings." Another colleague called Nick's writing "a model for how to engage in substantive and fruitful philosophical debate," and another remembered his arguments as "extraordinarily clear, luminous, [. . .] original, important, and right!".

In addition to philosophy, and his family and friends, his main interests included history (especially American history); baseball (he was a devoted San Francisco Giants fan and for a while had a dog named Willie McCovey); opera and classical music (he had an impressive collection of LPs and CDs; and he frequented the opera in Syracuse, Binghamton, and Glimmerglass, as well as CCO concerts); and cross country train travel, especially on Amtrak's California Zephyr, which traveled through the mountainous landscape he loved. He faced his Parkinson's diagnosis with characteristic grace and grew to love the community at his Finger Lakes Rock Steady Boxing class, many of whom rode the same Gadabout bus three times a week.

Nick is survived by his wife of 54 years, Joanne Sanderson Sturgeon; by their children Christopher (“Kit”) Sturgeon of Ithaca and Erika Sturgeon Drezner of Brooklyn, New York; by their son-in-law Todd Drezner and their grandson Sam Drezner, both of Brooklyn, New York; and by his sister Janet Sturgeon of Upland, California.

Written by Terence Irwin, Gail Fine, and Erika Sturgeon Drezner
Michael (Mike) Larry Thonney, professor of animal science in the Department of Animal Science at Cornell University, died on April 23, 2021, in Ithaca, New York. He was 71.

Mike was born on June 2, 1949, in Moscow, Idaho and grew up on his great-grandfather's homestead just outside of Pullman, Washington. As a child and teenager, he enjoyed swimming competitively and showing Hampshire sheep from the family flock for 4-H and Future Farmers of America. He graduated in animal science from Washington State University in 1971 and received his M.S. (1973) and Ph.D. (1975) degrees in nutrition at the University of Minnesota. Mike joined the Cornell Animal Science faculty in 1975 and once he arrived on campus he never left, with the exception of four sabbatical leaves in Scotland, University of California at Davis, Massey University in New Zealand, and Washington State University.

For over 45 years, Mike taught and advised undergraduate and graduate students, conducted research, and engaged in extension programs. Mike took over direction of the Cornell Sheep Program in
1998 and served as director of Graduate Studies for the Field of Animal Science from 2013 until his passing.

Mike took an early interest in computers before they were commonplace at home or in workplaces. In 1980, he served on two computer advisory committees at Cornell and encouraged others to make use of the technology. His research included the effect of potential mature size on growth and body composition of sheep and cattle, biological control of long-bone growth, genes that affect differential muscle growth, genetics of seasonality of sheep reproduction, vaccination against diseases in sheep, and dietary effects of potentially fermentable fiber in growing lambs and lactating ewes.

Mike was deeply committed to the viability of small livestock farms. Mike’s more recent research and extension activities were oriented around the optimization of methods for feeding and management of milking sheep in year-round systems: When the Cornell Sheep Flock was sharply reduced in 2016, Mike instigated its move directly onto campus and piloted practical methods to use meat sheep breeds for commercial sheep dairying. With a “can do” attitude, he established an on-campus, student-operated sheep dairy using tiny steps such as building a milking platform from scratch, providing his own funds for initial equipment. Thus far over 120 undergraduate students, many with no previous farm experience, and four graduate students, have learned to milk sheep, monitor lambing, artificially raise lambs, and feed and care for dairy sheep flocks under this program. In 2018, Mike transformed the Cornell Sheep Dairy from a research and demonstration operation to a Grade-A inspected commercial dairy that continues to sell ewe milk to small-scale creameries in New York and Pennsylvania. This transformation was accompanied by research into the link between levels of fermentable fiber in diets and the fatty-acid distribution in ewe milk as a determinant of quality. A great fan of sheep dairy products, he never missed a chance to promote his favorite locally produced sheep milk yogurts.

He initiated a brand-new Animal Science course, Dairy Sheep Management, and to date has taught 65 students, and more than 35
interns, volunteers, and student milkers how to milk, feed, and care for dairy ewes. The students, many with no previous farm experience, essentially ran the sheep dairy under this program. His excellent teaching and mentoring skills and obvious passion for the subject led many of his students to discover their own enthusiasm for sheep and small-ruminant dairying. Mike loved spending time in the barn and was especially adept at teaching lambs to quickly take a bottle and transition to lambars. The accessibility of the program has resulted in students, families, and others from the Cornell community regularly observing lambs on the Cornell sheep pastures. Mike was adamant that sheep grazing could mitigate the potential negative effects of land use change from agriculture to energy use and would contribute to solutions to climate change and habitat decline by their co-location with solar grazing. Through the efforts of Mike (and his dedicated collaborators, graduate students, interns, and farm staff), the Cornell sheep flock and Cornell solar farms have been instrumental in increasing livestock farmer knowledge of ways to diversify income through multiple use of livestock combining meat with dairy and co-location with NYS renewable energy projects.

Mike was honored with the National Association of Colleges and Teachers of Agriculture Teaching Award of Merit in 1997 and named the 2011 Shepherd of the Year by the Empire Sheep Producers’ Association, the 2015 Distinguished Graduate in Science, Education, and Technology by the Department of Animal Sciences at Washington State University, and the 2016 William J. Boylan Distinguished Service Award recipient by the Dairy Sheep Association of North America. Following his passing, a resolution celebrating his life and accomplishments was written and adopted by the New York State Senate and Assembly.

Although Mike often lacked patience for many aspects of University administration, he was tremendously committed to service. He served on numerous committees within the American Society of Animal Science, the American Meat Science Association, the National Cattlemen’s Association, the Dairy Sheep Association of North America, and the Federation of Animal Science Societies. In
addition to his service as director of Graduate Studies for the Field of Animal Science, he served on many University, college, and departmental level committees. He was a member of the Cornell University Faculty Senate and the University Faculty Committee at the time of his passing.

Mike had an understated sense of humor that sometimes took people by surprise. He and his wife enjoyed folk music and regularly attended Bound for Glory for many years. Mike rarely missed a family gathering, especially if he could coordinate the visit with a nearby animal science meeting.

Mike was predeceased by his wife of 32 years, Patricia, and survived by his daughter Elizabeth of Houston, Texas and son Benjamin of Ithaca. He is also survived by his sister, Sarah Fortin and brother-in-law Ed of Mason, New Hampshire; brother, Steve Thonney and sister-in-law Kathy of Prosser, Washington; and sister, Janet Adams and brother-in-law Bill of Florence, Missouri.

Written by Thomas Overton, Nikola Kochendoerfer, Tatiana Stanton, and Elizabeth Thonney
Dr. Peter J. Van Soest, emeritus professor of Animal Science, College of Agriculture and Life Sciences, Cornell University, and one of the most influential animal scientists of his generation, died March 21, 2021, in Ithaca, New York. Affectionately known as “Pete”, he was born June 30, 1929, and grew up on a dairy farm in Snohomish, Washington.

He graduated from Washington State University with a B.S. in Dairy Husbandry in 1951, and a M.S. in 1952 under the direction of T.H. Blosser. He obtained his Ph.D., under the supervision of N.N. Allen, from the University of Wisconsin in 1955 and was drafted into the Army where he served as a Biochemist at Walter Reed Institute of Research. In 1957, he was hired by Dr. Lane Moore to join the Dairy Cattle Research Branch of the Animal Husbandry Research Division at the USDA-Agriculture Research Service, Beltsville, Maryland and was given the objective to develop nutritionally relevant fiber analyses to replace crude fiber. Although the deficiencies of crude fiber were well known, it had been used since the 1860’s, and replacing it was no simple challenge. Peter initially focused on the measurement of lignin, the indigestible
component of fiber.

From a chemical perspective, nitrogen and hemicellulose contamination of lignin was a problem and he used acid and detergents to remove interfering components. This led to the acid detergent fiber (ADF) method, which was a preparatory step for the measurement of acid detergent lignin. His ADF method quickly became the replacement for crude fiber, but Peter knew that ADF was not a measure of total fiber. Accordingly, he continued to explore the use of detergents and other precipitating agents and created the neutral detergent fiber (NDF) method as an estimate of plant cell walls and a measure of total insoluble fiber in feeds and foods.

Not content with these breakthrough analyses of fiber, he focused his efforts on the variable digestibility of fiber and total dry matter in feeds. Peter developed an in vitro method, with input from microbiologist Marvin Bryant at USDA in Beltsville, Maryland, that accurately measured the digestibility of NDF. Additionally, he created a summative equation that demonstrated dry matter digestibility was a function of the digestible NDF and digestible neutral detergent soluble matter. He pioneered the concept of true digestibility and ideal nutritive entities that are the basis for our current evaluation of available energy in feeds. Two classic papers published in the late 1960’s summarized these important concepts. He postulated that NDF was the feed component that limited overall digestibility of feeds because it was the component with the greatest variability in true digestibility. To complete the circle of these seminal contributions, at the end of his career he demonstrated that lignin was the major fiber component defining indigestible NDF. His fiber and in vitro methods, and ideas about how they should be interpreted, are used throughout the world to improve animal health and productivity. These accomplishments alone would have established the importance of any scientist’s career.

In 1968, Peter was invited to Cornell University as an associate professor of nutrition, rising to professor in 1973, where his research interests proliferated with the help of his graduate students and
support of his colleague, Dr. James (Jimmy) Robertson. He studied fiber digestion in almost 50 species of animals, including humans. These efforts led to his modeling of the digestive process to describe the utilization of energy and protein by ruminants, which has been applied to production systems in the tropics. Also, he developed models to evaluate the interactions of body size, digestive capacity, fiber, and the feeding strategies of herbivores in tropical and temperate environments, extending this process to dinosaurs, particularly sauropods. He wrote a couple notable conference papers on the digestive physiology of sauropods strongly suggesting they had to be warmer than reptiles but not as warm as mammals to digest the volume of fibrous material consumed everyday as the digestive physiology had to follow a pre- or post-gastric fermenter to accommodate the digestion of fibrous carbohydrates. As a chemist, he studied the chemistry of the rare earths and heavy metals, which yielded methods for mordanting these elements to fiber to facilitate study of the kinetics of digestion and the rate of passage of digesta. He continued work on rare earth chemistry, resulting in methods to identify and quantify tannins, pectins, and buffering capacity in various feeds.

One of his other significant contributions was as a co-inventor of the Cornell Net Carbohydrate and Protein System (CNCPS), a cattle nutrition model currently used to formulate diets for over 70% of dairy cattle in North America and used in over forty countries. The development of the CNCPS was one of the most important ways Peter could frame his understanding of feed chemistry, the interactions with rumen microbes and overall digestibility and the nutritional contributions and behavior of diet ingredients. The concepts of nutritionally ideal fractions and components of feeds and their contributions to the nutrient status of ruminants are central to the success of the CNCPS being used around world to formulate diets for cattle.

Peter directed 29 Ph.D. and M.S. candidates and served actively on the advisory committees of more than 50 others. Often, his expertise and laboratories were utilized by students from other fields within Cornell, and from other universities in the USA and abroad. He
taught three courses on dietary fiber, nutrition and the interacting ecologies of plants and animals. Formally, or informally, Peter was a consummate teacher and mentor – he loved to teach at every opportunity. His textbook, “Nutritional Ecology of the Ruminant” is in its second printing and will remain the definitive work on the concepts of digestion and metabolism, physiological relationships, feed characteristics, and feed evaluation principles that are crucial to our current understanding of ruminant and herbivore nutrition. His broad knowledge and deep understanding about the chemistry of feeds and principles of animal nutrition were inspiring. At times, his knowledge of chemistry could be daunting for his students. One of his most famous lectures was on the biological relevance of the periodic table of elements. He rearranged the periodic table to represent how each element would interact with another as they would exist in biological systems, both plant and animal. This lecture would attract a wide audience as it was enlightening and unusual to see someone reconstructing the periodic table, especially for biologists, and having it make sense beyond atomic mass.

Few, if any, animal scientists will have the legacy of Peter J. Van Soest. He permanently changed the chemical and in vitro analysis of feeds and the understanding of herbivore nutrition throughout the world. His ideas were well-developed, comprehensive, and often transformational. His novel and revolutionary methods of analysis provide the foundation for current methods of feed evaluation used worldwide. To fully understand the impact of his work, it is helpful to look at his citations, both overall and specific to a few of his published works. As of the writing of this statement, Peter has over 110,000 citations, 30,647 coming in the last five years, many years after retiring in 1995. These citations speak to the impact of his methods and thinking in animal nutrition around the world. Further, a paper published in 1991 with co-authors Dr. Betty Lewis (Nutritional Sciences) and Dr. Jimmy Robertson titled “Methods for dietary fiber, neutral detergent fiber, and nonstarch polysaccharides in relation to animal nutrition” currently has over 26,000 citations and his textbook has been cited over 16,000 times.

For his efforts, he received numerous awards, including: American
Feed Manufacturers Nutrition Award from American Dairy Science Association (1967); Hoblitzelle National Award in Agriculture (1968); Merit Award of the American Grassland Council (1969); Fellow of the America Institute of Chemists (1970); American Society of Animal Science Award in Nutrition Research (1983); Honorary Research Fellow, Institute of Grassland and Animal Production, UK (1985-92); Farma Foods International Fibre Prize (1991); International Dairy Production Award from American Dairy Science Association (1992); Pioneer Hi-Bred Forage Award from American Dairy Science Association (1993); Washington State University Distinguished Graduate Award (1995); Fellow of the American Society of Nutritional Sciences (1995); and Morrison Award American Society of Animal Science (2001). In 1992, he received an honorary Doctor of Science in Animal Production from the University of Milan.

He was a member of the Association of Official Analytical Chemists, served on the Editorial Boards of the Journal of Animal Science, the Journal of Nutrition, the Journal of the Science of Food and Agriculture and was a Co-chief Editor of Animal Feed Science and Technology. From 1976 to 1980, he was a member of the National Research Council Sub-committee on Feed Composition.

After retirement, Peter spent time in Oxford, England and eventually settled in Catharine, New York in a house that he built on property adjacent to the home of his oldest son John and his family. As expected, Peter fully engaged in the history, geology, and botany of the area and developed a full wall map of the region in his office and would regale anyone that would listen about the role glaciers played in creating the landscape encountered on the way to his house. And he continued to work on fiber digestion and methods publishing papers into his 90th year. Being the consummate teacher, Peter continued teaching graduate and visiting students at his kitchen table on Saturday mornings going through his textbook and laboratory text as references up until the last couple of years of his life.

If you were lucky enough to fully engage him, he was famous for his dinners and was an excellent cook. Peter especially enjoyed
cooking and consuming very hot and spicy Indian dishes. At any gathering, there were three levels of heat, mild, medium and “Pete” and as he would always point out, his version disappeared faster than anything else and it was always a pleasure to learn from him, even in the kitchen.

And finally, Peter should be remembered for his love and intimate knowledge of classical music. He was an accomplished musicologist, music historian, taught himself the recorder, and was also fond of the harpsichord. Peter was known to lead small ensembles at holiday gatherings and around family where he played his recorder and enjoyed the recorder concertos by Handel. His favorite composer was Franz Joseph Hayden, and he could describe when, why and for whom much of his work was composed and how Hayden’s approach laid the foundation for the symphony and string quartet.

For those who knew him, he will be remembered for his awesome intellect, the intensity of his curiosity, his passion for scientific understanding, and his ability to share his knowledge with others.

Peter is survived by his ex-wife Marian Van Soest, three children (John, Anne, and Justin) and four grandchildren (Brianna, Abby, Olivier, and Phoebe).

Written by Mike Van Amburgh and David Mertens
Watt Wetmore Webb
August 27, 1927 – October 29, 2020


Watt Wetmore Webb was born on August 27, 1927 in Kansas City, Missouri and spent his first three years there. Due to lung problems he had as a young child, he moved to the Southwest and lived there from about age four to eleven. His favorite spot was Tyrone, New Mexico, on the continental divide, where the shaft copper mines stained the creeks a beautiful blue-green. He got his first job there as a horse wrangler at ten years of age, before he was even able to begin school.

Watt’s father ran a bank in Kansas City that his grandfather had founded (the Missouri Bank and Trust Co), and he wanted Watt to inherit the bank management from him. Watt was required to work in the bank throughout his high school years — on weekends and during the summers. Although he hated it, working at the bank gave him some knowledge of business practices which enabled him to pass most of his business courses at the Massachusetts Institute of Technology (MIT) by taking the advanced standing exams.
As an undergraduate at MIT, Watt sailed all over the country on MIT’s championship racing team and led the target shooting competition, winning more national championships. In his own words “I had devoted my time to competitive sports and many other extracurricular activities, which did provide experience in team leadership”. After graduating with a degree in business and engineering administration in 1947, Watt became an engineering manager of an automated welding development lab, where he learned to solve a variety of engineering problems. He realized then that he needed to know more physical science. He returned to MIT for graduate school and received his Sc.D. in 1955 with nearly perfect grades. Much to the dismay of his professors, however, he returned to industry to a fundamental research group in materials science in Union Carbide.

Watt chose to join the faculty at Cornell in 1961, because it seemed to him to be “way above other universities in accommodating flexibility and interdisciplinary interaction, both in research and teaching”. For the next 50 years until his retirement from Cornell, his research covered a wide range of fields, but he focused on only important problems and on breaking new paths rather than following the crowd. A framed calligraphy of Virgil’s “Tentanda via est” - which Watt translated as “to experiment is the true way” – hung prominently on his office wall. He took special pride in developing methods that made “impossible” measurements possible. He found exquisite methods to control the magnetic field of a superconducting magnet (1964). He developed methods to quantitatively measure diffusion constants on a cell membrane (1970s), and diffusion and chemical kinetics in an equilibrium solution (1972). He devised experiments to monitor the movements of auditory hair bundles at sub-nanometer levels (1988), the current through single channels in a membrane to pA levels (1989), and the details of living cells deep inside living tissue at sub-µm resolution (1990). He also co-invented the zero-mode waveguide for single molecule analysis (2003), which was subsequently applied to commercial DNA sequencing.

In 1972, while searching for a method to measure the binding of
DNA to its ligands, he invented Fluorescence Correlation Spectroscopy (FCS) together with Elliot Elson. His interest in measuring diffusion in biological systems drove him to explore an existing technique, Fluorescence Photobleaching Recovery, also known as Fluorescence Recovery After Photobleaching (FRAP). He developed a full quantitative analysis of FRAP in 1976, which was remarkably successful in measuring diffusion on membranes. He went on to solve several long-standing questions about the oligomerization of membrane receptors on living cells that led to cellular responses. His research in superconductivity required him to construct highly sensitive devices for measuring electrical current, which later enabled him to measure single channel currents through biological membranes. Many of Watt’s ideas, experiments and inventions have been the harbingers of change in their respective fields. For example, FCS measured the change of brightness of single molecules, and presaged single molecule detection, for which W.E. Moerner, along with Eric Betzig and Stefan Hell, were awarded the Nobel Prize in 2014. The Nobel committee stated, “A very early discovery of great conceptual impact was the experimental demonstration of fluctuations in chemical reactions ….. as carried out by Magde, Elson, and Webb”. The seventies marked Watt’s full transition from material science into the world of biophysics where he applied his physical science and engineering expertise to the exploration of and study of living things.

Probably the best-known invention of the Webb lab is two-photon laser scanning fluorescence microscopy. The technology, which was later generally referred to as multiphoton microscopy (MPM), enabled biomedical researchers to visualize for the first time cellular dynamics within thick, intact living tissues. It became the gold standard for deep tissue imaging of living organs or animal models and an indispensable tool for a wide variety of biomedical research fields such as neuroscience, immunology, and cancer biology. The method greatly reduces photodamage and photobleaching away from the focus and substantially increases imaging depth due to the use of long excitation wavelength which has much greater penetration into biological tissue. MPM also opened new opportunities for label-free imaging, which holds great promise for
clinical translation. Developing multiphoton clinical endoscopy became his main research focus for the last decade before his retirement. Watt was passionate about research benefiting the human health, particularly for Alzheimer’s disease and cancer.

Watt was an extraordinary scientist, and the intensity and the obvious joy in the hunt for understanding that he always brought were infectious to everyone around him. Watt had extremely diverse research interests and changed his research directions multiple times in his career, but he was always able to emerge as the leader by introducing ground-breaking new ideas. Watt once said to his students, metaphorically: "If you are at a conference and the room is packed with listeners, and you are not the speaker, you should be planning to move into a different area of research." That is the motto of a leader not a follower, of someone who pioneers new fields rather than always filling in the blanks.

Watt was a great mentor to his students and post-docs. He gave them enormous freedom and resources to follow their own passions. He never micro-managed them and let them grow through their own mistakes and successes (another framed statement, “Never grab the soldering iron from the hand of a student”, also hung on the wall of his office). He constantly encouraged new explorations and yet ensured that his laboratory always kept the highest standards for scientific excellence and rigor. He sought out collaborators who presented him with complex problems to solve that would further stretch his scientific capabilities, and his collaborators benefitted mightily from his cutting-edge methodologies as well as his scientific intellect. He was key in founding the vibrant field of Biophysics on the Cornell campus. Experimental science and Cornell are all so much the better because of Watt and all that he achieved and all that he left behind as his legacy. He will be dearly missed by his colleagues, collaborators, students and the scientific community, which will continue to benefit from his discoveries, inventions, and wisdom.

Watt was a grateful and loving husband, and an avid sailor. His wife and close companion on land and sea for six decades, Page

*Written by Chris Xu, Sudipta Maiti, Warren Zipfel, and Elliot Elson*
Frank W. Young, Professor Emeritus of Global Development at Cornell University, died on April 26, 2021, at his home in Ithaca, New York. Frank was born in Chicago, Illinois, on May 31, 1928.

Frank's undergraduate studies program at Deep Springs College (California) had a profound impact on his life. He was tasked with learning Latin, economic theory, political theory, and assisting an irrigation project for a Paiute Native American who did not speak English. After graduating he served in the U.S. military. From there he went on to earn a Ph.D. in Anthropology at Cornell University in 1957. His dissertation included fieldwork in Nova Scotia that investigated the impact of urbanization on two fishing villages.

In 1968, Professor Young spent a year at the Center for Advanced Studies in the Behavioral Sciences and in 1975 was a senior fellow at the East-West Center. After teaching at San Diego State and the University of Pittsburgh, he returned to Cornell where he spent most of his academic career and taught for 33 years. As a professor of Development Sociology (now Global Development), he was best known for his work on social solidarity, social structure, and
population health. He was widely published in sociological journals and served as the advisor to many doctoral students. Frank's commitment and attention to their careers endeared him to generations of students.

Professor Young's research record begins with anthropological investigations of initiation rites, menstrual taboos, inter-group dynamics, and later included the social determinants of mortality. Professor Young was an outstanding theorist who constantly probed the limits of social science knowledge. His theoretical acumen is perhaps best represented by the paper "Durkheim and development theory" (Sociological Theory, 1994).

Professor Young was a skilled polemicist who welcomed challenges to this thinking, and often took the opportunity to challenge the thinking of others. He was also a generous co-author who published numerous papers with students and colleagues.

Frank met Loretta "Lorrie" Rushforth in a mountain lodge near the town of Champery, Switzerland, in the summer of 1977. After communicating through letters, they were married ten years later in her native Chile. Together, they traveled to Morocco, Spain, Italy, France, Portugal, the Yucatan Province in Mexico, and the Caribbean Islands.

In retirement, Professor Young organized a monthly lunch group with his colleagues called the "China Lunch." He also belonged to the Argentine Tango Club and loved the outdoors—from canoeing in the Adirondacks to snorkeling in the Yucatan. To his children, Christopher and Douglas, Frank was a father who taught strength, patience, love, and tenacity to overcome hardships in pursuit of a better life.

He is survived by his wife of 33 years, Lorrie Young; two sons, Christopher and Douglas Young and their families, including grandsons Alex and Andrew; and sister, Nellvergne. He was predeceased by his first wife and mother of his children, Ruth Young, in 2001.
Written by Professors Thomas A. Hirschl (chair) and Parfait Eloundou-Enyegue