American College of Medical Informatics
In Memoriam, 2009—2010

Miriam Bloom

In this special section, initiated by Past President Joyce Mitchell in the expectation that it will become an ACMI tradition, we memorialize the lives of the fellows who died during her presidency. There were seven. Six were born a generation before the term informatics was coined and more than 50 years before the founding of AMIA. Six lived through World War II, four through the Great Depression. Two of the deceased—Helmuth Orthner and William Yamamoto—were founding fellows of ACMI in 1984, while three—Allan Pryor, Harold Schoolman, and William Schwartz—were elected the following year. Joachim Dudeck and Mario Stefanelli became fellows in 2001. Most of us are aware of the accomplishments of these men (for details, visit the ACMI wiki), but few are familiar with the lives they lived. Here, aided by the reminiscences of families, friends, and colleagues, we celebrate those lives. (An article about Marco Ramoni, who was elected to ACMI posthumously, appears on page 369 of this issue.)

Joachim Dudeck
Pioneer of medical informatics in Germany b. 1932

Joachim Dudeck, a physician, recognized the medical potential of informatics early in his career and greatly enjoyed the intellectual camaraderie of others of like mind. In fact, he reveled in it. Joachim treasured his colleagues. He loved visiting them, hosting them, opera-going with them, dining with them, wining with them, discoursing with them, and seeing to their comfort. Joachim was a devotee of fine living and a consummately social being.

“...When I visited for his 65th birthday conference, I was constantly accompanied by someone from his staff to make sure I got from the airport to the hotel, from the hotel to the airport, and everywhere in between. I was a guest at his home for dinner, as well. And he didn’t know me from Adam,” recalls Jim Cimino of the National Institutes of Health.

“When my family decided to visit Breslau to see where my father was born, I called Joachim, who was also born there, for travel advice,” recalls Ed Hammond of Duke University. “He said he understood who started the war, but still…”

After the war, Joachim saw his country split in two with himself in the wrong half, and he moved from East Germany (Leipzig) to West Germany (Heidelberg) while a medical student. Later, when the Wall came down and the country became whole again, Joachim reached out not only to the Eastern sector, but also to other former Eastern Bloc countries. “He promoted medical informatics and the use of communication and interoperability standards in the Czech Republic, Poland, Hungary, Latvia, Lithuania, Estonia, and the countries of the former Yugoslavia, and also Turkey and Asia,” notes Bernd Blobel of the HL7 Board. “He was my first scientific contact in West Germany after reunification, and he continuously supported my personal integration into the new environment as a staunch colleague and a warm-hearted friend.”

HL7, the organization that develops interoperability standards for health information technology, was started as an American enterprise in 1987. Its first step to becoming a worldwide entity occurred in 1995, when, as a result of Joachim’s vision and leadership, Germany became an affiliate. HL7 is now in 55 countries, and “today we cannot even imagine a German hospital without HL7,” says Hans-Ulrich Prokosch of the University of Erlangen-Nuremberg, Joachim’s long-time colleague and friend.

When Joachim tried to introduce HELP (Health Evaluation through Logical Processing) to Giessen, “it took us years to realize that we couldn’t transplant the American system to Germany,” continues Ulli. “Nevertheless, many of us reminisce with pleasure about the effort, and it did form the basis of the efficient hospital information system we have in the Giessen medical center today.” Ulli also reminisces with pleasure about the 1-week skiing trips to the Alps that Joachim organized at his institution every year because it was during one of those trips that he and Susanne (now Mrs. Prokosch) “became better acquainted.” “So you see,” says Ulli, “team-building turned into family-building.”

For Joachim, everyone was family.

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An unopened box rests in the basement of the Orthner Salt Lake City home, which sits in the Wasatch foothills and peers westward over the valley to the Oquirrh Mountains. The box was shipped to Utah in 2008, when Helmut Orthner, or “Helly,” as he was called, retired from the University of Alabama at Birmingham (UAB) and rejoined the Department of Biomedical Informatics of the University of Utah School of Medicine. Inside the box is Helly’s renowned Museum of Old Computer Parts, whose tangle of various and sundry hardware pieces includes antique electronic tubes, circuit boards from many generations of computers, and dissected communication cables. “Helly firmly believed that healthcare information technology managers (such as hospital chief information officers) who make decisions on the procurement of multi-million dollar information systems should have at least a rudimentary understanding of how computers and communication technology actually work, and that was part of his message when he showed his museum,” says Carolyn Orthner, Helly’s wife of 38 years.

UAB students remember Helly’s museum, and they remember the complete collection of SCAMC (Symposium on Computer Applications in Medical Care) and AMIA proceedings that he used to transport on a cart to classes as show-and-tell for the many contributions made to medical informatics recorded in them.1

SCAMC, precursor to the AMIA fall symposium, was founded by Helly (then at George Washington University) and colleagues in 1977. They “wanted—and created in its initial form—a meeting in which scientific but clinically significant papers were to be submitted by anyone and judged and rejected or accepted for presentation on their individual merits in a process independent of academia, government, industry, or any single scientific or professional society,” wrote Donald Lindberg and Betsy Humphreys of the National Library of Medicine.2

Helly was SCAMC’s first program chair and therefore “responsible for editing and compiling the proceedings, which at the time, without many of the electronic publishing features available today, was a daunting task,” recalls UAB’s Eta Berner.1

Helly’s interest in history and connectedness that The Museum of Old Computer Parts reflected was also evident in his personal life. Helly was born in Austria in 1941. His family experienced the turmoil of that terrible time as well as a splintering that led to Helly’s separation from his mother and two of his three siblings. When he became an adult, however, Helly made it his mission to bring his by then large and scattered family together, and when he built his own family in America he arranged for them to visit Austria regularly to connect with his past. In his 4 decades as an American, Helly never lost his attachment to Austria, nor did he lose his accent or his little Germanisms (at the dinner table he would tell his children, “Eat your plate”).

Helly was descended from three generations of physicians, but his love was mathematics and he decided to study electrical engineering. When he was at the Technical University of Munich, he heard of a new field of study being developed in the United States that would fuse his love of mathematics with the Orthner tradition of medicine—biomedical engineering—and he came to the University of Pennsylvania to learn about it. He earned his doctorate in the U of Penn’s Moore School, where the first general-purpose electronic computer, the ENIAC (Electronic Numerical Integrator and Computer), was developed, a legacy that the historian in Helly appreciated.

Like many Austrians, Helly was an accomplished outdoorsman; he sailed, skied, and hiked and was an enthusiastic mushroom hunter. He also enjoyed music (he would break into a Viennese waltz at the slightest musical cue) and was an adept photographer. “It seems as if Helly could do anything,” Carolyn muses, “but the truth is, he couldn’t carry a tune.”

Helly was a big science fiction fan and often first in line when a new sci-fi film was released. “In fact,” says Michael Lincoln of the Salt Lake City Veterans Administration, “Helly was always looking into the future. In the mid-1990s he was working with Qwest to get DSL connectivity going in small towns (and bigger ones) in Utah. That predated the Utah Health Connect, which was the sort of project Helly had in mind, and in a sense made the later work possible.”

Helly was deeply involved in home life, and sometimes work and home overlapped. Being an electrical engineer, for example, meant he never needed to call in an electrician. Carolyn tells of an incident that occurred at the time they decided to move to Utah and needed to re-wire their historic Birmingham home before selling it. With characteristic cheerfulness, Helly re-wired the entire house and they placed it on the market. Unfortunately, when the realtor arrived and flipped the light switch, everything went dark.

Those who worked with Helly will remember him not only for his vision and its fruits, but also for his personal skills—his ability to organize and convince, to imagine and realize, to be buoyant and to uplift.

In 2009, when the President of the United States singled out Intermountain Healthcare as a model of low-cost, high-quality medical care, he was unknowingly paying tribute to T. Allan Pryor. And if the President of the United States and the Joint Chiefs of Staff must one day decide within minutes whether to launch a nuclear weapon or risk being on the receiving end, Allan Pryor will be there in the Pentagon with them.

The link between US nuclear weapons strategy and Allan resides in the algorithms for complex decision-making he developed at Intermountain Healthcare in Salt Lake City, Utah. While earlier computer programs collected and organized data, Allan developed programs that interpreted data and incorporated decision-making strategies.

“What the algorithms do is minimize subjective data and maximize objective data by objectifying subjective data,” explains Dale Sanders, the man sent to Intermountain by the Pentagon to study those algorithms. “It’s all about identifying and deciding how to respond to false positives and false negatives, and either one’s a problem when you’re dealing with nuclear warfare.”

The first algorithms devised to interpret medical data were begun in the early 1970s, when Allan Pryor, together with cardiologist Alan Lindsay, developed a system to analyze and interpret electrocardiograms. Such systems, which then were the subject of Allan’s doctoral dissertation, are now used worldwide.

Then came HELP (Health Evaluation through Logical Processing). “Allan built the infrastructure for HELP, the first hospital information system that incorporated not only a computer record of structured patient data but also a knowledge base that provided decision support by alerting physicians, nurses, and pharmacists regarding potential dangers to the patient,” said mentor and colleague Homer Warner. And Allan solved the problem of allocating access among many users by devising a time-sharing system for HELP that gave priority to the program that needed a sample at a given instant.

The excitement of working on the forefront of medical informatics was matched by the excitement of working with Allan—reportedly an experience in itself. “You soon learned that he was in no way inhibited,” recalls Dennis Parker, a former graduate student. “And if you ever did anything embarrassing, you might as well announce it yourself, because he would enjoy helping you do it.”

You were expected to know Pryor’s Rules. There were 20, and they included such profundities as “Capture it all, we’ll sort it out later,” and “Documentation? We don’t need no stinking documentation.” A framed copy of the rules hangs in Allan’s old study in his Salt Lake City home and, no doubt, on the walls of many of his mentees.

Allan had an ever-present sense of humor that entertained his colleagues and that his son, Russell, characterized as “peculiar.” “He would pose questions that were outside the norm, and you couldn’t ever be sure when he was serious.” Allan was given to making bold or funny or audacious statements with a face that gave no hint of where they belonged on a 1-to-10 for-real scale.

“He kept you laughing and he kept you on your toes—you never knew what might come next. It might be a joke or it might be a brilliant thought, and quite often they were delivered together,” wrote Dale Sanders, the man from the Pentagon. (Dale was so inspired by Allan that he left the Pentagon and nuclear warfare strategies and joined Allan and healthcare at Intermountain.)

Allan pursued several hobbies with fervor. Not doing them well in no way detracted from his enjoyment of them. Golf was his favorite, and he usually played 2 days a week with colleagues-friends in games that transitioned into socials. “I love the game, but boy am I lousy,” he confessed. Russell confirms: “He loved the game, but over 50 years or so, he never improved.”

Allan also loved singing, but when he started to sing in a choir the choirmaster winced and said, “just move your lips.”

Allan loved traveling and eating, and eating was one hobby he did excel in. “I don’t think he ever ate a bad meal in his life,” said Karen, his wife of 43 years. “We would eat only in the best restaurants, not here only, but everywhere—in the Middle East, Japan, China, Eastern and Western Europe (took in some golf in Scotland), Scandinavia, Central and South America (South America won the Pryor prize for juicy red meat), all the contiguous United States, Hawaii, and Canada. Then there was Saudi Arabia, “where he spoke about hospital information systems with tubes hanging out of his veins because he was being treated for a blood disease but wouldn’t cancel the trip,” said Karen.

Reading was an intense interest, and history books were his favorite. “He discussed the characters he encountered as if they were friends,” said Homer Warner. “I remember how excited he was as he told me about Peter the Great forming the Russian navy.”

“When he started a book, he wouldn’t close it until it was finished, and every book had an assigned place. If one was moved, he noticed,” said Karen.

When Allan knew he was dying and was asked by his son if he was afraid, he said no. “We live and we die, and I have lived my life.”

Live it he did.

2. Remarks delivered at funeral, Salt Lake City, 2009.
Harold M. Schoolman
Broadened access to biomedical information b. 1924

Contrary to rumor, Harold M. Schoolman was nick-named “Hack” not because as a student he drove a taxi (which he did), but because as a baby he resembled the world-famous wrestler George Hackenschmidt. Nor did the resemblance end there. According to the wrestler’s biographer, “’Hack’ was never mean, vindictive, or unnecessarily rough .... was the epitome of calm self-assurance and inner peace, with full awareness of his own capabilities ... found no need for machoism or outward aggression.” And that, coincidentally, is the way colleagues remember ACM’s Hack, the sailor turned hematologist turned National Library of Medicine administrator nonpareil.

But ACM’s Hack did some wrestling too. In 1968, when the NLM refused to pay royalties to a medical journal publisher for the right to photocopy copyright single-use articles and the publisher sued (Williams & Wilkins v. US), Hack was right there in the US government’s corner. The case went from trial court (US lost) to the US Court of Claims (US won) to the US Supreme Court (vote tied, confirming the decision of the Claims Court), and in 1973, the US prevailed in the landmark decision.

“Hack was also heavily involved in work on the 1973 revision of copyright law and the development of accompanying ‘fair use’ guidelines, which govern what is permissible for individuals (and libraries) to do in making copies of copyrighted works for individual use,” said NLM’s Betsy Humphreys.

Additionally, according to the NLM Board of Regents Resolution of Appreciation, Hack “played a key role in the development of important NLM programs, including the National Network of Libraries of Medicine, the acquisition and organization of non-print educational media, internal NLM research on information retrieval, and the Unified Medical Language System.”

Hack’s being at the NLM, however, was something of an accident. He started his career as a hematologist at the Veterans Administration Hospital in Hines, Illinois, and in 1962 joined the Biostatistical Research Support Center there. (“Since there were no computers, he did all the calculations on a giant machine that sounded like a railroad train,” recalls his wife, Maria.) In 1967 he transferred to the VA’s Central Office in Washington and during that period was asked to serve on the NLM Board of Regents. But he never intended to join the NLM staff and did so only after President Nixon was inaugurated and VA senior scientists were replaced with political appointees.

“Hack was also involved in early discussions of the extent to which medical informatics applications could or should be subject to Food and Drug Administration regulation,” says Humphreys. And he gave guidance to a consortium of organizations that developed recommendations for the regulation and monitoring of clinical software systems.

Before all that, there was the Navy. Hack was in a Navy officers’ training program in college and went directly into the service when he graduated. He served as a lieutenant on an LCI (Landing Craft, Infantry) in the Pacific. At the end of the war he was sent to sweep the ports of Hiroshima and Nagasaki for mines just days after the atomic bombings, and the devastation he witnessed never left him. “But what upset him most was sailors’ going ashore to take advantage of the broken Japanese—by trading sugar for priceless family heirlooms,” recalls Hack’s daughter, Anya.

The cab driving was during medical school. “Since Hack’s father died when Hack was 10, there was little money, so he always worked while in school and scraped by,” says Maria. “There was a story about a teabag which he claimed that he and his college roommate used for 6 months,” she adds. “He also made money playing bridge with the football players until he won a prize that made him too famous to get anyone to play with him any more.”

Hack’s father—a psychiatrist, anarchist, and one of the first to apply Freudian analysis to literature—died of a heart attack at the age of 50, and Hack anticipated the same fate. When he was 35 and proposed to Maria, he warned her that the marriage was not going to last long, and Maria had to agree that 15 years of marriage would be enough. So he bought lots of life insurance, married Maria, and lived to celebrate a 50th wedding anniversary.

Maria, a professional designer, painter, printmaker, and sculptor, introduced Hack to a new world. “He didn’t know much about art, food, or gardening, subjects I was and am passionate about, but he was a natural learner,” says Maria. “After Hack saw the possibilities of gardening, he became interested in camellias, plant propagation, and especially clematis. Although I did most of the cooking, he was an enthusiastic eater and took up bread-baking a few years ago.” Museums, concerts, and travel further enriched his retirement.

Hack’s lifestyle seems to have served him well, because, notes Anya, “he got to make his exit without ever seeing a physician or going to a hospital. He was the world’s only Christian Scientist Jewish doctor.”

From Anya’s eulogy: “We are here to celebrate a man who died happy, who enjoyed his retirement, his garden, his bread-baking, and his grandchildren and who adored my mother and the life of art, food, music, and travel that they built together. A special thing about my father was that he always let us know what was important to him. I propose a toast to appreciating what is important—and acting on it.”

L’Chaim.

William Benjamin Schwartz  
Specialist in kidneys, computers, and the cost of care  
b. 1922

How does one and the same person become an authority on (a) the kidney (eponymized in the Schwartz-Bartter syndrome), (b) computer applications in medicine (proposing “heretical” strategies), and (c) medical economics (proclaiming the inevitability of healthcare rationing in the US)?

First, by working zealously. “Bill Schwartz was a hard-driving, almost obsessive person, single-mindedly focused on his work,” wrote long-time colleague Arnold Relman of Harvard.1 “He lived for his work,” echoes Tressa Ruslander Miller, Bill’s wife of 19 years. “The day we got married he was at the computer when the rabbi walked in the door.”

Second, by being exhaustively rigorous. “We had to record all results, good or bad, and to independently check and verify every single calculation,” recalls Richard Tannen of the University of Pennsylvania.2

Third, by pursuing sequential careers. First, Bill headed the nephrology division at Tufts-New England Medical Center, focusing mainly on acid-base and electrolyte disorders. After two decades he moved on to administration and into career number two—medical economics and healthcare policy. At around the same time he became interested in the potential of computers for diagnosis and decision-making. “Bill visualized before most people how computers, Bayes rule, and decision analysis might be used in clinical medicine,” notes Tufts colleague Jerome Kassner. “He tried to teach a generation of house officers and their teachers to use decision analysis, but the effort faltered.” Then, as Bill became more involved in health policy, he abandoned that interest.

Fourth, by living long and keeping his boots on (he worked into his 80s).

Born in 1922, Bill was the son of a rabbi and a child of the Great Depression. In his youth he delivered newspapers for spare cash. When the US entered WW II he was an undergraduate at Duke, but because of the nation’s urgent need for physicians he was fast-tracked into medicine and never earned that bachelor’s degree. By the time he finished training, though, the war had ended. After an internship in Chicago he served in the Army Medical Corps at the Cushing Veterans Administration Hospital in Framingham, a facility built to serve those injured in the Allied invasion of Europe.

In 1950, after 2 years as a research assistant at Peter Bent Brigham Hospital, Bill joined Tufts and he married Carol Levine (they divorced in 1981). He built Tufts’ nephrology division and he built a family, and the two mingled. “Dad enjoyed entertaining his colleagues and threw wonderful parties with my mother,” recalls Bill’s daughter, Laurie.

William Waters, a 1960s fellow, remembers those parties: “He invited the fellows and spouses to his home every month, warmly welcoming us as part of his family—except that we invariably came away with a ton of work to do.”

Bill trained many nephrologists at Tufts and made seminal discoveries in kidney function. “He rejected standard concepts of acid-base balance—in which cations were called bases and anions acids—as obsolete. He forced the world to think in terms of proton balance,” says Waters.3 At the same time, “he was a devoted father who wanted to give us everything he didn’t have. All three of us knew that if we awoke in the night for any reason, we were to wake up Dad and he would be there to soothe us back to sleep,” remembers Laurie.

In 1971, Bill moved on to administration but found himself yearning to do research again. Searching for a subject, he observed that “the problem of rising medical costs was just beginning to emerge as a social concern, quality of care was becoming an issue, and it was my sense that health policy analysis was going to be an important new area for research.”

Bill’s interest in health policy began as an unexpected outgrowth of his research on CO2 accumulation in patients with lung disease, which he happened to be conducting at the same time that the Defense Department was planning to send a man into space. It turns out that Defense was concerned that CO2 would accumulate in the space capsule, so they recruited Bill as a consultant. “That’s when he was introduced to the terms trade-offs, opportunity cost, and systems analysis. “It was an odd entry point into the policy world,” he said, “but it exposed me to the kind of analytic approach that seemed highly relevant to all of the emerging healthcare issues.”

Soon after that, Bill spent a summer studying health economics at the Rand Corporation in Santa Monica. He returned to Rand several more times, concentrating on health policy analysis, and it was during such a visit that he met Tressa. They had a bicoastal relationship for 12 years and remained bicoastal after marrying until Bill retired from Tufts and joined the University of Southern California as an emeritus professor of medicine.

Tressa, an artist, notes that Bill had a strong esthetic bent. He designed his workspace at Tufts and at USC, where “he was proud of the decision to paint the lab walls in the coordinated color combinations of the 70s,” says Tressa. “As with his work, he paid a great deal of attention to detail, and he had a minimalist sensibility. As a scientist who thought creatively, it was not such a stretch to understand the process of creativity in art.”

“Dad also enjoyed jazz (among his favorites were Modern Jazz Quartet, Paul Desmond, and Dave Brubeck),” says Laurie, “and watching football on TV. And he loved chocolate.”

2. Remarks made at memorial service.  
Mario Stefanelli
European leader in artificial intelligence in medicine b. 1945

Mario Stefanelli loved the lab—so much so that he rarely wanted to leave or visit any place else. “Vacations and weekends ticked by so slowly for him that he often became restless,” reports Mario’s son, Ulisse. “He was always happy when Monday morning came.”

What Mario did so happily, starting each Monday morning, was head bioinformatics research at the University of Pavia. Riccardo Bellazzi, Mario’s long-time friend and former student recounts: “In the late 1970s, Mario worked on mathematical modeling of iron metabolism and anemias. Then he felt that modeling was not enough. As a bioengineer, he wanted to build a system that could help physicians make the right diagnosis. So over time, he moved from mathematical disease modeling to medical informatics. He started with expert systems in artificial intelligence but then became interested in improving the systems themselves. He wanted to support not only diagnosis, but all aspects of decision-making—therapy, patient monitoring, and everything else. So he moved from expert systems to computerized guidelines that could support therapy and workflow, designing ways to improve how healthcare delivery is organized. The computer, he reasoned, should be able to provide the right information to the right person at the right time. And that’s what he was involved in during the last phase of his activity.”

When Fischio—Mario’s companion in the photo—was a puppy, the two used to go happily to the lab together. Mario found Fischio (Italian for whistle) by the Ticino River (probably left by a shepherd) and adopted him. Mario and Fischio were attached to each other, and when Mario died, Fischio’s distress was so profound that it was painful to witness, relates Silvana Quaglini, Mario’s colleague.

Another subject of Mario’s affection was art, especially painting, says Ulisse. “He went to art shows and museums and was a member of the Tate (never missed a visit when in London).” At one time he himself painted, although he was not very talented. “He had a blue period (one painting),” says Ulisse. “One of his paintings was a copy of Munch’s The Scream with an added collage saying ‘Let all the injustices of the world scream.’”

Mario cared about injustice. He was a student protestor while at Collegio Ghislieri (thoroughly enjoying the fascist state) and was a member of the Technical University of Braunschweig remembers when three tenors at the conference dinner were pouring forth famous opera arias and Mario joined in, “sharing with us that he was much more than ‘just a scientist.’”

Mario’s voice was strong, but not gift quality. “He really could not sing,” says Ulisse. “I will never forget my surprise years later in recognizing some of the strange tunes he used to shout while driving me to school in his white Fiat 500. He had encrypted them.”

A gift that Mario did have was the ability to understand people. “We used to joke that his first impressions of people were more precise than those of his wife, a Jungian analyst,” says Ulisse. “And he always listened, especially to students, whom he would invite to come and discuss their problems. He was like Lucy with her ‘five-cents-please’ psyciatric help booth.”

It was after MedInfo 2004 that Mario suffered his first ruptured aortic dissection and concomitant stroke. He was comatose for a month. After an 8-month struggle he returned to work with a residual mild motor deficit (he could not run!) reports Silvana, and a disturbing dyslexia. “But the interesting aspect is that he pushed his lab to initiate research on computerized cognitive rehabilitation, saying ‘You have a real patient in the lab, exploit me! I can help you make the system more patient-tailored,’” says Silvana.

Mario had a second hemorrhagic stroke in October 2010, but he didn’t get back to the lab.
William Shigeru Yamamoto
Pioneer of medical informatics in the US b. 1924

“Our family of 5 was dirt poor in Pasadena, living in a small apartment between the Union Pacific and the Santa Fe tracks,” wrote William Yamamoto of his high school years.1

A competitive chemistry exam earned him a scholarship to the University of California and a chance at the education his family had always wanted for him. But with Pearl Harbor and Executive Order 9066 (which took away the freedom of people of “foreign enemy ancestry” who lived in Pacific coastal areas), his living accommodations became even worse and his scholarship non-redeemable. He and his family, each with the 75 pounds of personal belongings allowed them, were moved via military Jeep to an internment camp in the Santa Anita Racetrack.

“I lived in ‘District 7’ of what looked like Stalag 17—barbed wire, search lights, and absurdly, machine guns,” he recounted.1 But when Pres. Young of Park College in Missouri visited the camp and paroled him and 5 other Japanese American boys, offering them a free education, life improved and he was forever grateful. (Fifty years later, when Congress ordered that Japanese Americans be compensated (Fifty years later, when Congress ordered that Japanese Americans be compensated for a few minutes. After finishing the call I found Jennifer sitting in Dr. Y’s office at a big conference table, mesmerized as she watched him carefully cutting out paper dolls.

Bill was cutting in his research, too. He was a leader in mathematical modeling of physiological systems, medical computation, and real and artificial nervous systems, and he was particularly interested in mammalian respiration—an interest that followed from his having had pulmonary tuberculosis while in medical school (he recovered after spending a year in a sanitarium).

“He published a large body of work that formed the basis for respiratory sections of physiology textbooks,” says Wiley Chambers, a GWU colleague of Dr. Y’s. He also served the University beyond the chairing of his department. For example, “he always seemed to be dragged in as a moderating influence or arbitrator in disputes within the medical center—a thankless job that required wisdom and sound counsel.”

GWU’s Anne Fasbender, who was Bill’s secretary then, reminisces: “My most touching memory of Dr Yamamoto is of the time I brought my 3-year-old daughter, Jennifer, into the office of Dr. Y (as many called him) came out to greet her. Then the phone rang, and I was distracted for a few minutes. After finishing the call I found Jennifer sitting in Dr. Y’s office at a big conference table, mesmerized as she watched him carefully cutting out paper dolls.

Bill had a questioning and philosophical temperament. GWU’s Ted Achacoso, Dr. Y’s protégé and co-author (AY’s Anatomy [a pun on Gray’s Anatomy] and Scaling up the nervous system of Caenorhabditis elegans: Is one ape equal to 33 million worms?) notes that “Dr. Y’s mind was tantalizingly dangerous because he applied precision of thought to the grayest of gray areas in science and ethics. When I first entered his lab, he asked me, ‘Is beauty computable?’ I answered yes. ‘Is consciousness computable?’ I answered yes ....”

“Achacoso, if your head were chopped and sewn to my neck and my head were chopped and sewn to yours, assuming that were all possible, who is Achacoso and who is Yamamoto?”

In an exam: “How does one die on the cross?” and “Why am I asking this question in a statistics exam?”

Nor was Dr. Y traditional in his clinical thinking. “If mathematical modeling could accurately predict the chances of an individual having a heart attack within a year—which would be a giant step in medicine—Dr. Y’s main concern would be what people would do with the information,” says Chambers. “Would people who believed they were going to have a heart attack be careful so as not precipitate it, or would they live life to the fullest, enjoying every moment? And could just telling a person increase the stress level and thereby become a self-fulfilling prophecy?”

Like the other deceased colleagues we remember in this issue of JAMIA, Dr Yamamoto was a visionary. Tangible testimony to that is a patent he obtained in 1999 for a transparent structure of his own design that can store a person’s DNA along with ID and two items of memorabilia. Its function is to “provide a potential for resurrection of a biological subject in anticipation of future innovation in genetic engineering and somatic cell cloning.”

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2. US patent no. 5987720.