JON MICHAEL DUNN

JUNE 19, 1941 – APRIL 5, 2021

A Memory Book

Mike Dunn was a native of Indiana, born in Fort Wayne, to Jon Hardin and Philomena Elizabeth Dunn, and raised in Lafayette. He received his Bachelor of Arts at Oberlin College in 1963. He received his Ph.D. three years later from the University of Pittsburgh in 1966 with a dissertation on *The Algebra of Intensional Logics*, where he studied with Alan Ross Anderson and Nuel Belnap. He taught at Wayne State University in Detroit and at Yale University before joining the philosophy department at Indiana University in 1969, where he remained until his retirement in 2007 as the Oscar R. Ewing Professor of Philosophy.

Professor Dunn was a Fellow of the American Academy of Arts and Sciences, President of the Society for Exact Philosophy, on the Executive Committee of the Association for Symbolic Logic, editor of the *Journal of Symbolic logic*, and chief editor of the *Journal of Philosophical Logic.* He was the author or co-author of six books and over 100 papers. He was a Fulbright-Hays research senior scholar and visiting fellow at the Institute for Advanced Studies, Australian National University, Canberra 1975-1976. He was a senior visitor at the Mathematics Institute, University Oxford, England, 1978, and an American Council Learned Societies fellow in 1984-1985.

He was a huge influence on the development of the department and its ascent during the 1990s to national and international prominence in the field of logic. He was the chair of the Philosophy Department from 1980-1984 and from 1994-1997. He served as an Associate Dean in the College Arts and Sciences, 1988-1991, and as the Executive Associate Dean, 1991-1993. He was the founding dean of the School of Informatics at Indiana University in 2000 (now the Luddy School of Informatics, Computing, and Engineering). He was a professor of Computer Science from 1989 to 2007, and a Professor of Informatics from 2002 to 2007. In 2007 he received the Indiana University, Bloomington, Provost's Medal and was appointed a Sagamore of the Wabash by the Governor of Indiana.

Professor Dunn's work focused on information-based logics, especially substructural logics, including intuitionistic logic, relevance logic, linear logic, BCK-logic, and the Lambek Calculus. He adopted an algebraic approach to these topics known as gaggle theory (generalized Galois logics), developed especially in two books, *Algebraic Methods in Philosophical Logic* (with G. Hardegree, 2000) and *Generalized Galois Logics* (with K. Bimbó, 2008). He also worked on quantum logic and computation and proved with Katalin Bimbó the decidability of Ticket Entailment, an open problem since 1960. Additional information about Mike's contributions to IU can be found in this article from the Indiana University Alumni Newsletter at the time of his retirement in 2007. You can find an intellectual autobiographical essay by Mike Dunn here, with a full list of his publications at the time of its publication.

He married Sarah (Sally) Jane Hutchison on August 8, 1964 and is survived by her and their two children Jennifer Anne and Jon William Dunn.

Marcia Baron and Fred Schmitt

Mike Dunn was a cherished colleague and friend. Although at the time we arrived (2001), he was already heading the School of Informatics, he retained a lively interest in the philosophy department and was very welcoming to us when we arrived. Despite being a former chair and at the time a dean, he never presented himself as an authority to whom we (even we neophytes) should defer. When he came to department meetings (as we recall he did in our first year or two), he was an excellent listener, devoid of arrogance. In person, just as in his published work, he could explain the most difficult mathematical material in terms so simple that he made you wonder why you hadn't grasped it all along. His contributions to logic and philosophy were, and still are, awesome.

Despite being very busy as a researcher, mentor, and administrator, Mike always had time for a conversation and was a wonderful conversationalist, be it at the Farmer's Market, at the annual holiday party he and Sally hosted, or at a department reception. He could be and often was hilariously funny. We recall a story he told about a high school math teacher who told the students that the account of pi as a transcendental number was needlessly complicated, because pi was really the rational number 22/7. We couldn't stop laughing as he told the story in his wonderful, cheerful deadpan. Mike was a go-to person for us on the challenges of keeping up or restoring an old house and on travel, and always seemed to have time for multiple email exchanges on what to see, where to eat, and where to stay in Prague (and no doubt would have had similar suggestions for other destinations). Most of all, we remember that when you were in Mike's presence, no matter how trying your circumstances might be at the moment, you had an overwhelming sense, emanating from his benevolent voice and countenance, and from the clarity of his reason, that everything was going to be all right, you wait and see. We miss his warmth, his wit, and his enthusiasm. It is hard to believe he is gone; his vitality and energy certainly gave us the impression that he would be with us for many more years.

Katalin Bimbó

J. Michael Dunn was a world-famous logician by the 1980s. I read some of Dunn's papers on relevance logic as part of a (small) research project upon a suggestion from my supervisor when I was doing my first university degree—in Europe.

I met J. Michael Dunn for the first time soon after I started my PhD at IU. He and his wife used to give parties on occasions when visitors gave talks in the IU Logic Group Seminar series or in the Philosophy Department. These were well-attended parties, with faculty members (often from several departments), visitors, graduate students—all mingling and conversing.

I took several courses with Professor Dunn. He was a relevance logician (mainly), but he knew the metalogic of classical first-order logic so well that he would walk into the

classroom (without any notes) and continue from where he stopped at the end of the previous lecture. His classes might have been hard for those who were not interested in logic and took the course only to qualify in the PhD program. But those who were interested in logic—and at the time there were quite a few PhD students like that at IU—could learn way more from his lectures than merely the content of a textbook. The IU Philosophy Department had the top PhD program in logic in the US in the 1990s, and Dunn was instrumental in creating that standing.

To enliven lectures in a course, Dunn would occasionally tell a joke—a logic joke, of course. One of the jokes that he would tell (in various situations) purports to prove that there are infinitely many typos in any manuscript. (It's a joke on so many levels, and so few people remember it when they write something.) The proof is by induction. Base case: you can surely find one typo in a paper. For the inductive case, notice that if you have found *n* typos, you definitely can find one more, just look hard a bit longer. Therefore, by induction, we can conclude that any paper contains infinitely many typos. Another joke he liked to tell was about separable infinite-dimensional complex Hilbert spaces as a concrete example of a structure. A favorite quip of his was that "What we cannot prove, we assume." It sounds like a proverb, but in fact, it is a very useful advice to anybody who is trying to prove a theorem that has never been proved before.

He was very generous with his time and knowledge to students who showed interest in logic. After a lecture, he welcomed interested students into his office to explain finer points beyond the course material and to provide references to papers to read. He often lent or gave his own xeroxed copies of papers to students. (Those hard copies of papers were valuable resources at the time when publications were not available online, just a Google search away.)

I consider myself very lucky in that he allowed me to work with him on some of his research projects and to co-author some publications with him. Needless to say, but I will stress it anyway, I learned a lot from collaborating with him—a lot of logic, and a lot of other things beyond logic.

My impression is that his most profound research interests were always at the junction of logic, its algebra and its relational semantics, although he published on other topics in logic, philosophy, computer science and informatics. It is appropriate that a class of algebras called "Dunn monoids" is a proper superset of the class of algebras that he introduced and named "De Morgan monoids" (which algebraize R, the logic of relevant implication with intensional truth). Dunn devised the first Kripke-style semantics for a (semi-)relevance logic in the late 1960s, and later, he formulated a framework, which he termed "Generalized Galois Logics" (or alternatively, "gaggle theory" or gGl's), to give semantics for a wide range of logics. This is an overarching theory, and he and I co-authored several publications on various bits and pieces of gaggle theory as well as on topics connected to relational semantics. Two results that we proved (and are easy to describe) pertain to the decidability of logics. In 2010, we proved that the implicational fragment of ticket entailment is decidable, and half a decade later, we proved linear logic decidable.

In the last decade, if I visited in Bloomington for a couple of days (during the fall or spring break), we would meet in his office. We would fill and erase the small whiteboard multiple times while talking about logic. Then we would go for a coffee. And he would also show me around in the School of Informatics, which kept growing every year. It seemed to me that he was very pleased with how successful this part of IU turned out to be.

Cameron Buckner

Mike was always so supportive of me. By the time I knew him, he was already super-big-shot of the university. But every time I met with him he was genuinely interested in my research and cared to ensure that the university structures were treating me well, especially given my interdisciplinary bent. Such a mensch. Someone you could talk with about anything and come away learning something new.

Jerome Busemeyer

I met Mike in a small quantum discussion group organized by Gerardo Ortiz that included Mike, Andy Hanson, Amr Sabry, and Amit Hagar around 2005 or so. We were discussing all kinds of ideas ranging from quantum cognition (my work) to finite field theories of quantum physics (work by Amr and Gerardo). Mike was interested in quantum logic. However, I always appreciate Mike's interests in my work and encouragement to explore new ideas.

Dave Chalmers

I first met Mike on a visit to IU in August 1988 when I was thinking about moving to grad school here. Mike loved the idea of a mathematician moving to philosophy, and he also had a soft spot for Australians, so he was very encouraging. I remember him telling me of plans for the IU philosophy department to appoint all sorts of big names—one name that I recall is Jon Barwise, who moved to IU a couple of years later. That's typical of Mike as I remember him. He was always full of plans that he'd share with a conspiratorial tone. He was disarmingly sweet and gentle, but he was also amazingly good at making his plans come true.

Inevitably, I moved to IU. My main advisor was Doug Hofstadter, but I needed a co-advisor whose main appointment was in philosophy. Mike was a logician, and my thesis was on the philosophy of mind, but he seemed the obvious choice all the same. We had many conversations about consciousness. He was sympathetic both personally and intellectually. He confided in me that he had never trusted the Wittgensteinian line that tries to deflate consciousness and private languages. He was also full of sound practical advice on any number of matters. I remember many afternoons spent in Mike and Sally's living room, with Mike passing on his hard-earned wisdom from years in the profession. A couple of years later Mike was the main advisor for my fellow student

Gregg Rosenberg, whose Ph.D. thesis "A Place for Consciousness" has become a classic in the field. So aside from Mike's well-known contributions to logic, one can also credit him with less well-known influence in the philosophy of mind.

I last saw Mike just over a year ago, on a visit to IU in February 2020. As always, he was full of warmth and gossip. He still had big plans for the years ahead, not just for himself but for IU and his students and colleagues. With Mike's death, I don't know which of those plans will come to fruition. But I remember having the sense that Mike's legacy is all over IU. His imprint is all over the philosophy department, the logic group, and the huge school of informatics. He attracted so many key figures to campus, from Jon Barwise and Doug Hofstadter to IU president Michael McRobbie. I like to think that Dunn Meadow, Dunn's Woods, and Dunn Street were named after him—if they weren't, they ought to have been. He was a force of nature and a gentle soul.

Harry Deutsch

Mike befriended me almost as soon as I arrived at Indiana in, I think, 1972, as a faculty member. I often had dinner at his house with his wife and young son. We would frequently have very competitive ping pong games in his basement, making enough noise so that we had to be hushed up. Eventually, I worked very closely with him on my UCLA dissertation on analytic entailment. In recent years I have corresponded with him on various topics both logical and personal. I loved him dearly.

Paul Eisenberg

I joined IU's Department of Philosophy in 1966. It was my first job! A couple of years later the department was much changed and greatly improved by the arrival of George Nakhnikian as its new chair. As I recall, he brought with him from Wayne State Hector-Neri Castaneda, Nino Cocchiarella, and—yes—Mike Dunn.

In 1975 Mike and his wife (Sally) invited me to a dinner at their home. (I had become departmental chair by that time.) Probably not altogether coincidentally, they had also invited—among others—a certain Lana Tam. She was doing her Ph.D. in History here at that time. Mike knew her because he and her former husband (David Tam) had been friends in high school. In any case, we two were seated next to each other, and apparently Lana liked what she saw since soon thereafter she invited me out to lunch. That was the beginning of our three-year courtship; so in a clear-cut way Lana and I owe our marriage—now in its forty-third year—to Mike.

Mike served very capably as the departmental chair some few years after his arrival here. He and I remained friends then and through the many following years, although our research interests in philosophy were very different. Friends though we were, he chose not to inform me—or anybody else outside of his immediate family!—of his struggle with cancer and then pneumonia; so, like Lana, I was absolutely shocked by the

call we received from Mike's and Sally's son (Jon), telling us of Mike's death on the very morning it had occurred.

He will be sorely missed by those of us who knew him as a colleague and a friend.

Zachary Ernst

I first met Mike Dunn in 2001 when I was a graduate student. I was writing my dissertation, but also had a part-time position at Argonne National Laboratory's Math and Computer Science Division, where I was working on automated theorem-proving systems. Mike had posed some problems years earlier which were still unsolved but were good candidates for these theorem-proving systems. So I'd been reading his work and trying hard—with some excellent colleagues of mine—to answer one of his open problems.

Ultimately, we did answer this problem (about an axiomatization for a system of relevance logic), which we were going to present at a workshop held at Argonne. When I showed up, I felt a little bit like I was in over my head. I was a graduate student, new to this area, and suffering from a severe case of impostor syndrome. I had come to the workshop armed with Mike's book, "Algebraic Methods in Philosophical Logic", which I'd been cramming so that I could maybe sound like I knew something. But my chances of being able to pull off sounding like I knew what I was talking about dropped to zero when I discovered that Mike Dunn himself was one of the dozen or so people attending the workshop.

I soon learned what everyone else already knew about Mike. Of course, he was brilliant. But more importantly, he was the most unassuming, unpretentious, supportive, and generous person you could hope to meet. Mike explained the motivations for the problem, speculated about what we might learn from our solution, and gave us all a lot more insight than any of us could have gleaned from a journal article or book. He treated me like a colleague despite my inexperience, but also like a trusted teacher, insofar as he took the time to explain how he thought about these problems. He was a perfect model of how an established expert should treat younger, less experienced people who are trying to break into their area of expertise. I came away from the workshop having learned a lot more from Mike than he could possibly have suspected. More importantly, after having met him, I felt that although I had an enormous amount to learn, I could work hard and eventually make some contributions. When I eventually became a professor with students of my own, I often thought about Mike and hoped I could be that kind of teacher.

Another lesson I picked up from Mike's career was the value of learning about technology. To anyone who was acquainted with his totally unassuming personality, it may sound odd to call him a "visionary"—we often think of pretentious egomaniacs as the visionaries—but Mike was the rare variety of humble visionary. A quarter of a century ago, Mike Dunn already knew that computers would play an important role in

mathematical research. This was a time when the conventional wisdom was that machines could not contribute very much other than fast, brute-force calculation. The fact that Mike went out of his way to attend this tiny workshop meant that he was betting that technology would have a much bigger role in research than was generally appreciated. When I learned that Mike was spearheading an effort to build a school of informatics, this was in keeping with his vision of technology's broader role in scientific research. That project was way ahead of its time, and I'm sure there were plenty of skeptics. But the smart money does not bet against Mike Dunn.

I learned a lot more from Mike than he could possibly have suspected. And I'm confident I'm not the only person who can say that.

Milton Fisk

I first met Mike Dunn before he came to Indiana University at a small conference on problems in logic and philosophy held at a professor's home in Michigan. At that time Mike was on the faculty at Wayne State University under George Nakhnikian. At Wayne State there was a group of philosophers who were interested in the importance of logic through philosophy. When Nakhnikian moved to IU he brought a significant number of this faculty here including Mike Dunn. Mike's Interest in philosophy was not as a classical philosopher but rather his specialty was logic as it developed in the 20th century bringing closely together aspects of philosophy with logic. As Mike developed his approach, he became a widely respected leader of logicians. Mike discovered there were people in Australia who were developing somewhat similar views to his. This led to his going to Australia and eventually developing significant ideas with his counterparts there which eventually led to his drawing Michael McRobbie to Indiana University.

We became friends as a group of us ate lunch together frequently at the Indiana Memorial Union discussing philosophy, the state of the department, the University, and the world. One of my memories of Mike is marching in an anti-Vietnam War protest. Mike, I and around 2000 of us marched to Memorial Stadium on 17th Street. As we passed by the side of the under construction Musical Arts Center, we were pelted by hot bolts used for installing the roof. As our friendship developed Mike allowed me to walk through his Park Ridge East yard to save me a few steps on my daily walk to the University. More importantly he introduced me to a book on cabin building which I used as I built a cabin on my wooded property. To this day I enjoy this cabin which thanks to Mike is much sturdier and better constructed than it might have been.

Mike was for many years the head of the Philosophy Department, a post in which he was admired for his balanced judgments. His administrative contributions to Indiana University grew as time passed and Indiana University is the better for his many years of service.

Margaret Gilbert

I first met Mike when I spent the fall semester of 1981 as a visiting professor in the philosophy department at Indiana University. At the end of the semester, just before my husband and I had to move out of the sabbatical home we were renting, my car broke down and needed some time to fix. Mike and Sally very kindly invited us to stay with them during this time, which we did, leaving us with fond memories of their kindness and hospitality. Much more recently, Mike and I discovered we were both on the visiting committee for the philosophy department at the University of Texas at Austin. I was delighted to see him again, unchanged, and was pleased to be engaging in the task at hand with such a congenial colleague. When our work in Austin was over, the other member of the committee visited with local friends and Mike and I enjoyed a pleasant dinner in a local restaurant. It was with shock and sadness that I heard he had died.

Rob Goldstone and Katy Börner

We are so deeply appreciative of everything that Mike Dunn did for the entire IU community. We fondly remember the holiday gatherings that Sally and he hosted, filled with good cheer, comradery, joy, and spirited exchange. He created so many communities (Cognitive Science, Logic, Informatics) that thrived under his stewardship, and will continue to flourish and inspire because he gave them such strong foundations. What made us feel like we belonged was his gentle manner, wit, and willingness to embrace other people's contributions and improve upon them. He welcomed, supported, and enriched us as scholars and human beings. He brought us all closer together.

Luis Estrada González

The ties between UNAM's Institute for Philosophical Research and the University of Indiana are old and strong. In fact, Mike was a teacher of many of our faculty members. Thus, when the Institute celebrated 50 years of its founding, we decided to invite Mike as the keynote speaker at logic and metaphysics sessions. There, in the breaks, we talked about various things, especially the history of relevance logic and its main actors. Even though several of those actors had a very loose hand and had little qualms about narrating all kinds of anecdotes in their writings, Mike clearly had a lot to tell, things that could not be found in print, at least not easily.

In those days I told Mike that in 2019 I would organize an event to commemorate 50 years of the founding of the Logicians 'Liberation League (LLL). Later I found out that Mike thought I was joking. (I do not know whether he considered it a good or bad joke and I did not dare ask him. I would not have liked him to think that I have a poor sense of humor, especially since his sense of humor was fantastic.)

Mike did indeed return to the Institute in October 2019 for the LLL celebration. Again, he was the keynote speaker at the event and closed it with his talk "RM^2 = Robert Meyer and R-Mingle: Some Histories and Theorems". (Now 'RM' has a new meaning to me,

besides Robert Meyer and R-Mingle: Remember Mike.) He began his talk by giving the background to the founding of the LLL and narrating the event as the eyewitness that he was. After the Q&A, the most emotional moment of the event was lived. Mike screened the LLL Manifesto and had us recite it as a chorus, just as he said he would do at the beginning of his speech. I strongly invite you to watch the video of the talk: https://www.facebook.com/iifsunam/videos/2257208707718052

My most sincere condolences to Sally and all of Mike's relatives and friends. The Boss of Bloomington will be greatly missed. Long live logic!

KIRK LUDWIG

I first met Mike at a meeting of the Society for Exact Philosophy, sometime in the early 1990s. I know it was the early 1990s because I remember that we talked a bit about his impressions of John Lombardi, who had just become president of the University of Florida and was coming to us from Indiana University. Mike said that he was too much of a numbers guy, which surprised me just a bit. I thought, 'Mike's a logician, logicians like numbers!' But it came to fit with the portrait of Mike that I developed over time. Mike was a world-class logician, but also a philosopher through and through, and a humanist, someone who believed in the mission of the university in the broadest sense, a force for the preservation and advancement of knowledge and civilization. It wasn't all about numbers for him.

Mike had already retired a few years before I arrived at Indiana University in 2010. But he was still very much a presence at philosophy events and in the cognitive science community. As many people have remarked, he was both very sharp but also kind and extremely considerate. He made an effort to make me feel at home, and Shih-Ping and I soon received a coveted invitation to come to Mike and Sally's famous Holiday parties, where I got to know a lot of interesting people I would not have met otherwise. It seemed that Mike knew absolutely everyone at IU and it certainly seemed that everyone at IU knew about Mike. Given how influential Mike was administratively I was always amazed at how he could maintain such a high-level of productivity and excellence in his logical work, a pace that continued after retirement.

Mike was a phronimos, a man of practical wisdom. I went to Mike for advice a number of times about administrative matters and always came away with a clearer head. But I mean more by saying Mike was a phronimos than that he gave good administrative advice: as Aristotle said, "But we also think that some people are wise in general and not in one department." And that's what I think about Mike, that he was wise in every department of life.

We will miss him quite a lot. He had a great life, full of friends and full of accomplishments, both intellectual and administrative. He shaped new fields of research. He was twice chair of the philosophy department and had a hand in its rise to the top ranked department in logic in the 1990s. He also shaped and nurtured new institutions, chief among which is the Luddy School of Informatics, Engineering and

Computing, the first of its kind anywhere in the world, but one which now has many imitators.

Ed Mares

I really loved Mike's logic lectures. He always found a philosophical hook on which to hang the formal results. We could see the philosophy develop at the same time as the formal logic.

He was also a huge help to me and his other students professionally. He was always giving students extremely useful advice (that I didn't always take, and often took time to understand) about how to write papers for publication (he went through my first article with me in fine detail), how to give professional talks, and how to structure our research careers. He also taught me a lot about how to teach logic, and not just by example. I remember his "Beware of the Bimodal Curve" lecture very well.

Mike liked to tell people that he didn't have a big research programme. But that's not really true. He just didn't believe in the one-true-logic. He thought of logical systems as tools, largely to deal with information of different sorts: inconsistent information, quantum information theory, and so on. But he was very open to Girard's programme of a logic of computational resources (in which information is only one sort of resource) and he and Gerry Allwein created a Kripke-style semantics for it. The research programme "Logics as Tools" is open-ended and endlessly rich. It is really as big as research programmes get.

Mike had a very useful attitude towards philosophy (not just logic). One evening we were drinking at a Mexican bar in Louisiana and he said, "Look, we can't just call that view crazy. All philosophical views are crazy. My views are crazy. Your views are crazy. You really need a more substantive criticism." He was right and I have always tried to keep that point in mind when I have engaged in philosophical debate.

Mike also had an interesting and endearing way of talking in professional settings. He would often (almost always, in my experience) preface questions by saying "I don't really know how to say this but …" and then say what he meant perfectly clearly, very often giving the speaker a serious insight into what he or she was actually doing. He was always extremely supportive, especially of younger researchers, and always seemed interested in whatever people were doing in logic.

I never saw Mike get angry, and only saw him express frustration a few times over the 36 years that I knew him. His ability to keep his cool and be friends with everyone probably helped him be a very effective dean.

I give my deepest condolences to Mike's family: Jon, Jennifer, and their children, and to his life partner, Sally. Sally, I'll miss seeing you and Mike at conferences. In recent years we have met in Rio, Haifa, Mexico City, and Melbourne. Logic Conferences won't be the same without the two of you.

Michael McRobbie

I was truly fortunate to be mentored in my early days as a researcher by some truly great scholars and researchers, and Mike was at the very top of that list. I first met him when I was a graduate student at ANU in 1975 and had the great privilege of working closely with him throughout the year he was there. We stayed regularly in touch thereafter.

The first time I visited Bloomington was in 1985, and I stayed with Mike and his wife, Sally. Ten years later he was instrumental in nominating me for the position of IU's first vice president for information technology in 1996. In a very real sense, I would not have been here were it not for Mike. He was a truly extraordinary individual and an exceptional faculty member, administrator and innovator who was deeply committed to academic excellence in all that he did.

Mike also made enormous early contributions towards building IU's current standing as a leader in the pervasive use and application of information technology to advance the university's teaching and research missions. In 1997, I appointed Mike as chair of IU's University Information Technology Committee, which produced IU's ground-breaking IT strategic plan in 1998 that is now the gold standard for such plans in higher education.

In the more than two decades that have followed, we have witnessed the fruits of the vision, hard work and leadership to which Mike contributed and which has resulted in world-class IT infrastructure, services and facilities that have been critical in supporting excellence in almost every area of the university's operations.

Mike was also the founding dean from 2000 to 2007 of the nation's first-ever school of informatics, which, within a few short years, developed into one of the nation's largest, broadest and best schools of its kind. Mike fully understood and appreciated the major human and societal implications of mathematics, computer science and IT. This is reflected in the broad view that the school continues to have of computing and IT education and research—a view that sets it apart from many of its peer schools.

IU will miss Mike dearly, and I will greatly miss his wisdom, mentorship and friendship, but his legacy will live on across the many areas of the university where he had such a transformative impact. Our deepest sympathies go out to his wife, Sally; children, Jon and Jennifer; his grandchildren; other family, friends and former colleagues; and all of the many individuals who had the privilege of knowing and working with this great scholar and even greater individual.

Tim O'Connor

Mike Dunn became the department chair soon after I arrived at IU in 1993, as a newly minted PhD. From the start, he was very supportive of me, personally and professionally. I felt little to no stress concerning the process of becoming a tenured member of faculty over the seven years that followed. That's not a boast; it was a

consequence of Mike's steady, warm encouragement, accompanied by the gentlest of occasional prods, which made it clear that everything would work out just fine. His advice, delivered with the wide smile we all knew, was simple: carry out your scholarly projects, to the best of your ability, and push yourself to be an engaging teacher with high standards, taking stock of what worked and what didn't, at the end of each term.

Mike was a philosopher of exceptional accomplishment, but I remember him best, professionally, as a cheerleader, wanting others around him to succeed in their own professional aims and speaking generously of the promise he saw in people. Personally modest, he was very ambitious for the department, the College, and later the School of Informatics that he founded. It was always a mystery to me how he managed to finagle resources for bold initiatives, even in lean times. (True, it helped that administrators were less given then to expensive symbolic gestures of no enduring impact, with their eyes more steadily concentrated on the core mission. Mike knew how to make a case for the value of an undertaking, to his peers and to the higher-ups, and everyone knew that he delivered.)

The halls of academia contain many people with admirable qualities of a sort distinctive of scholars, and a few of shining, hard-won accomplishment that serve as guiding stars for the rest of us. But, at least in our age, academia is also a fertile environment for the development of snobbery, condescension, contempt, and a comic sense of entitlement. Mike Dunn ascended to guiding-star status without being choked along the way by those noxious weeds. He was a good and kind man, unpretentious to the end. I admired him greatly.

Adriano palma (IU 1989)

Mike was a member of my doctoral thesis committee; & I was very impressed by how critical he was on the merits of my elucubrating on indexicals, an area rather removed from his core concerns. He taught me in several courses on logic: the best one in my memory turned out to force me to think hard on what it is for a function to really depend on its argument, something that was not evident at all from the standpoint of the relevance logics central to the class.

I miss his sense of direction: in our last exchange in these times of "anything via a computer" I pointed out to him a strange notation in an online paper of his. With his usual speed he sent me note of thanks since hundreds of people read the paper and nobody noted it was inconsistent, due to fairly minor notational variant.

His home and his family has always been to all students, quorum ego, a haven of good sense of laughter.

There was a time at which IU philosophy was a sort of logic fortress and that is what I found nowhere else: even the most surreal metaphysical suggestions were taken seriously in the modality of: there might, none the less, be a model in which ... the surreal might look real.

May Indiana earth be kind to one of his best sons.

Dave Penniman

Mike and I developed a close friendship as we struggled to build informatics programs at our respective institutions. When my institution disbanded our program Mike offered me a sanctuary and a place to rethink and redirect my energy. He was a wonderful friend and colleague and I am so glad to have known him. I will miss him but he is not forgotten.

Bill Rapaport (IU PhD 1976)

I first met Mike when I visited IU in the spring of 1971, after having been accepted there without financial support for the 1971-1972 academic year. I had been accepted at Chicago, whose department invited all accepted students out for a visit. While there, they asked if any of us had any questions, emphasizing that we had already been accepted so we could ask anything we wanted. I, older than most of the other students, boldly asked how they compared themselves to IU, especially with respect to logic. Their answer: IU was better! So I visited IU on that same trip. I met briefly with three faculty members: Hector-Neri Castaneda (who eventually became my dissertation supervisor)—I did not understand a word he said—and Nino Cocchiarella and Mike Dunn. Mike kindly told me that I would probably get funding once I was there, which prediction turned out true.

I took several logic courses from Mike, and when it came time to choose a dissertation topic, he gave me a bibliography on definite descriptions. Reading that in chronological order gave me the idea for my dissertation: Apply a Meinongian theory (which Hector was working on) to the problem of negative existentials. Mike was originally going to be on my committee but withdrew when he went on sabbatical.

I stayed in touch with him afterwards, when both of our interests moved to computer science. And I remember him visiting my Buffalo colleague (and former IU CS faculty member) Stuart C. Shapiro and me when Buffalo was considering creating an informatics school.

It was Mike who introduced me to Stu Shapiro, by inviting him to give a talk to the department on Stu's use of relevance logic for an AI knowledge base. I was tremendously impressed with Stu's use of relevance logic. Years later, when Stu moved from IU to Buffalo, I re-introduced myself. Stu then became my computer science MS thesis advisor (my thesis applied Castañeda's quasi-indexicals to Stu's knowledge representation system) and later my colleague on the Buffalo faculty.

I have often thought of him and will treasure his memory.

Gregg Rosenberg

Before Mike was my thesis advisor, he was my first graduate logic teacher at IU. I asked him to be my thesis advisor as a form of revenge. I figured since he gave me so much homework I couldn't understand, I would return the favor. Of course, I couldn't figure out his problem sets because my muddled mind couldn't rise to the level of sharpness he needed me to, while he'd have problems with my thesis because his sharp mind couldn't wrap itself around my muddled prose. I have to say he was incredibly tactful with his criticisms and patient with my attempts to improve through the various drafts. I was at first very nervous about having a world-renowned logician leading the critique of my writing but in reality he made the process an easy pleasure.

His thesis guidance and seminar teaching are not the strongest impressions he left with me. When I think of Mike, I think mostly about the interactions outside of class and since my graduation. He was warm, generous, friendly and easy to be with. He was an accomplished man who didn't need to impress and was always more interested in talking about you or some new idea than himself. I recall as I was graduating in 1997 he was very excited about a weird thing called "informatics" that I'd never heard of. Within a few years, in typical Mike Dunn style, it was all the rage and he had IU at the forefront.

Mike was an amazing man, an effective mentor and a good friend. The world was greater for him having lived in it and it is diminished with his passing. My heart breaks to hear we have lost him and my mind treasures my experiences with him.

Sebastian Sequoiah-Grayson

You were an inspiration, a mentor, a friend, one of the greatest logicians, philosophers, and computer scientists that the world will ever know, and a kind and wonderful person in every way imaginable. I shall remember your generosity, enthusiasm, humour, and passion always. From the hills of Brussels to the mean streets of Hejnice, you were always unstoppable. Thank you for everything Mike. Salut....

Rich Shiffrin

For those of us in cognitive science, I should tell how Mike was a ‘founder’ of the cognitive science program. When Tom Erhlich was appointed IU president IU had a reception at Bryan House for him the summer before he took over (I think 1987). Mike and I were invited and were talking to Tom, who asked us about Cognitive Science at IU. He asked us because he told us that the single group at Pennsylvania that had given him the greatest trouble as provost were the psychologists and cognitive scientists. Nonetheless, he described how important he thought cognitive science was in the intellectual culture of a university. Mike and I therefore decided on the spot to form a cognitive science program at IU, believing we would get support from ‘on top’. Mike and I then had a short discussion concerning who would do it. Mike, being more senior, had

his way, and convinced me to do it, with the arguments that I had 'more time', and that anyway it would be 'easy'. [It was not so easy, but retribution occurred later when I suggested him for, and helped talk him into taking over as, the first dean of informatics.

Somewhat prior to the meeting with Ehrlich I had several interactions with Mike that opened my mind. As a hardcore experimental psychologist and modeler I had a view of philosophy as an interesting intellectual exercise, but a field that had no relevance for psychology or my research interests. This attitude may not have been expressed overtly but certainly colored my thinking and verbalizations. Mike noticed this, but he would never have engaged in any form of argument. Rather he engaged my interest with a series of questions about mind and behavior that probed the mysteries of mind, consciousness and brain (think early Dan Dennett). I soon realized I had no answers to what were the most fundamental issues about mind and behavior. In his quiet and pleasant way, with no hint of an argument, Mike 'enlightened' me to the importance of philosophy of mind, and philosophy generally.

Mike was an intellectual giant and we will sorely miss him. Even in his last years he described with enormous excitement (well, excitement for Mike, somewhat low key for anyone else) the new and innovative logics he was developing and publishing.

Paul Spade

Mike Dunn was not a man to be trifled with! Here is a little anecdote to illustrate the point. In itself, it isn't very significant. But it impressed me a lot at the time!

In the spring of 1978, IUB had a small crisis. We were suffering through a national coal strike that affected the heating plant for the entire campus. Because of the difficulty and uncertainty of getting coal, heat in most campus buildings was dramatically reduced. If the boilers, we were told, ever went out at central heating for lack of coal, and the water pipes froze and broke, we would just have to build an entirely new campus; it couldn't be repaired! So IUB simply shut down March 4–27, 1978. This included not only turning thermostats down to almost freezing in most buildings (with exceptions for places with sensitive scientific experiments, delicate grand pianos, etc.), but also shutting off hot water.

When the crisis was over, the heat was back on, but hot water in Sycamore Hall was somehow *not* restored.

Now turn the clock forward more than two years to the fall of 1980. Mike Dunn was just starting his first term as department chair. The hot water was *still* not on in Sycamore! So, Mike got on the phone. He called whoever it was who managed such things in those days, and complained about the situation. The person — call him X (I don't remember his name) — was very friendly and sympathetic, and acknowledged that, yes, they were having delays getting all the buildings back up and running, but then remarked that they didn't have any hot water in the music buildings near our side of campus either! Imagine playing the violin or blowing into a brass instrument with cold fingers or lips.

Mike reported the conversation to me. So I went over and checked the restrooms in the various music buildings near Sycamore Hall. They *all* had hot water. I came back to relay the results of my "research" to Mike — who immediately got back on the phone to X to follow up.

Again, their phone call was very cordial and pleasant, but our hot water stayed off! This went through several iterations, with my serving as Mike's "scout" to go check out the various claims X was making. Finally, X said he would look into it, and a few days later — lo, our hot water was back on!

The moral of this story is twofold: First, Mike could be *very* determined when he set his mind to something; he simply wasn't going to give up! But second, this entire episode was conducted in a spirit of comradery and almost jocularity. This, I think, illustrates one of Mike's most important virtues: throughout his career, he was almost always able to settle matters amicably. Even when people didn't get their way, they came away not being too upset with the outcome. This was certainly true during the two terms he served as our chair — sometimes on quite controversial matters! Mike was a skilled diplomat.

As I say, in itself this is a trivial illustration. But I am certain you won't find any other contributions to this memory book explaining how Mike got out our hot water turned back on!

Paul Syverson

I arrived at IU in the Fall of 1981 as a fairly clueless first-year graduate student in the Mathematics Department. There was not much logic activity taking place in that department back then, and I went to the Philosophy Department to see if someone there could give me any advice on how I might more actively pursue my burgeoning interests in logic. This was how I first met Mike Dunn. He was chair at the time. He welcomed me into his office and spent a long time describing to me both his own work and everything that was going on in logic at the IU Philosophy Department. But, Mike also listened to my interests and encouraged me to pursue my studies in Philosophy. And, that is how Mike also began to be a mentor to me on the first day I met him.

It is hard to cover, or even sum up, all that Mike has been for me. Even before I was his advisee he seemed always available to patiently listen and give feedback—which looking back I cannot understand, because he was regularly doing so many things at once in research, teaching, and administration, and doing them all well. There are people who seem to do more than is possible for a single human being. I have met perhaps four or five from that select group in my career, and I believe Mike is dean of that school as well (yet another job for him). But he was not all work. He has also been very involved with his family and welcoming and active socially as well. (Sally of course gets much credit here too. Mike amazingly found another quite like himself.) Besides hosting many wonderful social gatherings at their home, Mike was also very social around the department and a welcoming draw for the handful of professors and grad students that

regularly had lively and jovial lunch conversations at the IMU cafeteria. He also helped maintain our broader philosophical culture. I remember him printing up and distributing a collection of philosophy-themed song lyrics, the only title of which I can recall now is “Thus Spake Saint Anselm”, a ditty that set out his ontological argument to the tune of “Waltzing Matilda”.

Mike was always offering useful suggestions of things to pursue, both career decisions and research ideas, but never pushing them. He had strong philosophical opinions about logic and other things; nonetheless he never discouraged me from pursuing an idea just because it struck him as implausible. Still, anyone who knew Mike knows this wonderful way he had of drawing his chin down and widening his eyes when he was dubious of what you were saying. Without interrupting, that look often served as a signal to me that what I was saying needed to be much more thoroughly examined and evaluated. Much of my career success comes from Mike's helpful and kind guidance. To borrow an unpublished term that I submitted years ago to the Philosophical Lexicon (unfortunately after it stopped accepting new entries): to cover all the relevant contributions attributable to Mike can probably never be completely and properly dunn.