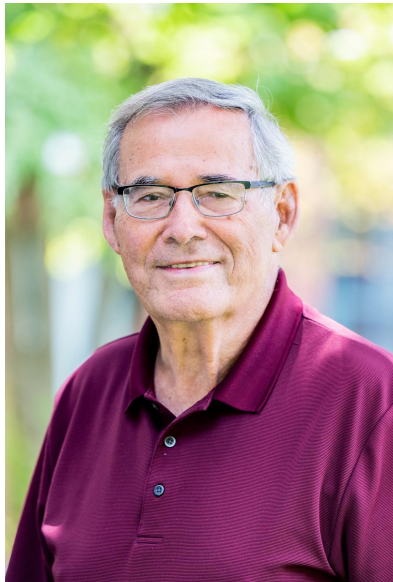


Celebration of Mac Rutherford: Virtual Card

The following are cherished memories and heartfelt tributes from colleagues, former students, and friends, weaving together a tapestry of memories celebrating Mac's extraordinary legacy.



BROWN

Department of Earth, Environmental
and Planetary Sciences

Nancy Fjeldheim (Department Manager 1990-2018)

It is hard to conceive of Geology at Brown without Mac. He was a kind and gentle soul who always had time for anyone who wanted his expertise, his historical perspective or his friendship. He treated everyone with the same amount of attention and respect. Mac stopped by almost everyday with an observation, a story, a coffee or just to say hi. He was a mainstay in my daily life and an absolutely integral part of the Geology family. He will be sorely missed and his impact on the culture of the department is a testament to him. He was one-of-a-kind and I am lucky and honored to have known him. He was a dear friend. My deepest condolences to Mac's family.

Julia Hammer (Postdoc 1999-2002; Professor)

Mac enriched my life for the past 25 years, starting when I met him at a workshop on Mt. Vesuvius in 1998. I was then a graduate student at the University of Oregon. He suggested I write an NSF postdoc proposal to run some experiments on the rocks I had been looking at from Mt. Pinatubo's 1991 eruption. I spent the next three years learning the ropes of experimental petrology from Mac and cultivating appreciation for Dunkin Donuts coffee, Australian wine, and Heise gages. When I left Providence in 2002, it was to devote the next 5 years to building a lab patterned after his. He visited me in Honolulu several times to help install my lab. He sent me 30 lb care packages containing valve bodies and he hand-carried nickel pressure vessels to me at LPSC conferences. Over the next 20 years, we never went longer than a month without touching base. He had an empathetic ear and uncanny ability to relate and provide support. He always seemed to know what to say, whether the issue was a professional disappointment, a lab mishap, an interpersonal squabble, or a personal setback. When I miss him I will remember these blessings. I will try to be like him as an advisor and I will channel his tone in my manuscript reviews. I find it hard to believe he's not going to text or call again, and I won't see him at the next LPSC. But his influence will be felt whenever I cone and thread steel tubing, whenever the subject of oxygen fugacity arises, when I write a letter of recommendation, or when I have the opportunity to send a student into the world with a box of valve bodies.

Alberto Saal (Professor)

I started my Assistant Professor position at Brown in 2003 and by 2005 with Mac Rutherford's welcoming character, guidance and support we started writing (my first) NASA proposals to measure volatiles in lunar volcanic glasses. Over the following 15 years thanks to Mac's support, scientific insights, kindness and above all coolness and humor, I have had one of the most productive and fun times of my academic career. I could not have asked for a better colleague, collaborator and dear friend. I owe him a lot of what I have achieved.

Jack Hermance (Professor)

Mac's acceptance of an academic appointment at Brown in the early '70's was one of the initial giant steps our department took in defining its place in national and international science. It quickly became apparent to those of us on the sidelines of his science that Mac had an incredible reputation among colleagues in his field. I cannot count the number of times when, during receptions at international conferences, I would sense a note of deepest respect for Mac and his work, from associates in NASA, the USGS and academia.

Peter Schultz (Professor)

Mac became Department Chair soon after my arrival to Brown. He was extraordinarily gracious including pre-Campus Dance gatherings at his home and support for my entry into academia. For the next 20 years, he was often the only other Geology faculty member on the dance floor and at the department table to meet parents of graduating students. He also served on several Ph.D. thesis committees and always brought insight, wisdom and student support. His tenure as Chair harkens back to a time when the department worked together on strategic plans and a family atmosphere. Even after his retirement, we crossed paths at the bus stop (both of us used public transportation) and chatted about his new research. My sincerest condolences to Helen and the rest of the family. I will miss him.

Terry Tullis (Professor)

Mac and I shared a professional history closer to one another than to anyone else and his unexpected passing hit me really hard. We both came from UCLA to Brown as Assistant Professors in July of 1970, Mac having been a postdoc at UCLA whereas I was a graduate student and an acting instructor there. Although our research focus was different, we both did high pressure and temperature experiments and our labs were right next to each other once the department moved into the GeoChem Building. I frequently borrowed high pressure fittings and tools from Mac, including one very large crescent wrench that was occasionally indispensable for me. Not long ago he kindly put an electronic part I was considering using into "Big Bertha," his large gas pressure vessel to see if it could withstand the pressure (it couldn't!). In the last few years our paths remained similar, both doing research as emeritus professors and sharing issues including when we needed to move out of our offices. I was traveling out of the country when he died and couldn't believe it, having seen him in the lab soon before I left on the trip, looking as vigorous as ever. Unfortunately, I will again be out of the country at the time of the department's Celebration of Life for Mac, lecturing on a Brown Traveler's alumni trip just as Mac has done for Brown. I'm sad to miss the gathering with all of his friends and family and will be thinking of you all that day. My heart goes out to the entire family for your great loss.

Dina Egge (Department Manager)

I will never forget the warm welcome that Mac provided when I started in this department. It was an overwhelming job for me, especially filling Nancy Fjeldheim's shoes, but Mac was always kind and friendly. Yes, he was a Scientist and Leader in this department, but to me he was always a friendly face. I came to rely on him for insight and enjoyed his historical perspective of the department from his many years here, including his years as Chair. He leaves an amazing legacy both personal and professional here in DEEPS.

Pat Davey (Academic Program Manager)

I will always fondly remember Mac and his generous nature. He would often stop by my office for a chat and he always had a great story to tell. It was hard for me to believe when I heard that Mac had passed. He leaves behind a legacy as not only a groundbreaking scientist but of a kind and generous man. He will be missed. My deepest condolences to Mac's family.

Jennifer Anderson (Ph.D. in Planetary 2004)

Mac was such a kind, gentle presence in a room. Even though I wasn't one of his students, he remembered my name and chatted at every LPSC we saw each other. I remember his soft voice and laugh and smile after our Geological Science seminars. He was just a kind human being and incredible scientist. My condolences to his family and to his scientific family.

Gillian Galford (Ph.D. 2010)

Mac always had a kind smile and was so welcoming. He will be missed.

Justine Owen (B.Sc. 2000)

I took Mac's geochemistry class and loved it! Not only did he make all the different permutations of silicates interesting, he seemed to care about the class and our learning journey. I'm sorry to hear he passed away. I'm sorry to hear he passed away. He was a delight.

Bruce Heine (B.Sc. 1987)

Fond memories of working with Mac in his lab as an undergraduate. He was an amazing, kind person who always gave time to sit and talk about the experiments and how we could do them better. Lots of fun and learning. My condolences to his family.

Susan Keddie (Ph.D. 1995 in Planetary)

My fondest memories of Mac are of sitting in class with him deep inside the GeoChem building. He would be explaining something on the screen and then would look down to consult his notes, swapping his glasses as he did so. Then he would look up at us and swap the glasses again. A constant back and forth of glasses that he managed without interruption to what he was saying. And one day, he paused mid-sentence, cocked his

head, and then apologized, saying that he had thought he heard a goose. “I thought I heard a goose” is often said in our house, usually when we lose our chain of thought during a conversation. And it reminds me of Mac and makes me smile. As a fellow Canadian, I am surprised I never spoke more with him about our homeland. He will be missed. Deepest condolences to his family.

Narissa Willever (B.A. 1994 Geology-Biology)

As a right-brained student who came to Geology by way of an interest in ecosystem sciences, I found the prospect of filling my Geochemistry requirement quite daunting. To my great surprise, the class ended up being one of my favorites at Brown. Mac was such a big part of that - his soft-spoken manner, kindness, and enthusiasm. I'm sad to hear of his passing, but glad to hear he had such a long and full career and obviously made a such a positive impact on so many students.

Brian Tonks (B.Sc. 1996)

Mac was so accommodating, helpful, caring, and generous with his time. I decided late in my undergrad to take on a thesis and he offered me a project that had several warning signs on it, but he was willing to be there through each step. He helped me adjust my expectations and timing just so the project could be finished. I'll remember his kindness and gently challenging tone in one-on-one meetings in his office, getting to a point of new and deeper understanding and then being sent off with a new book. Two more vignettes: 1. Stopping the van on a field study trip to pick up a case of beer. 2. I was working retail, Mac stood in line, laid down a job application and said, “I think this would be a good fit for you,” didn't buy anything, and left.

Maria-Daphne Mangriotis (B.A. 2002 Geology-Physics/Mathematics)

One of my favorite professors of all time! I have fond memories of the field-trip and labs, those were formative experiences. He had a very lovely personality and filled the space with good energy. He inspired us to love geoscience.

Joel Hernandez (former Financial Coordinator)

Mac was always extremely pleasant with me and was willing to talk about his family and give me advice on how to raise my children. I will miss him dearly.

Paolo Papale (Research Director, INGV Italy)

A great scientist and a real gentleman, and besides that, a friend. I'll miss you, Mac.

Bill Ehmman (Sc.M. 1983 Planetary)

During my time, Mac was serving as Department Chair and was a good mentor to me at various points. Interestingly, he and my father knew each other from sharing an interest in meteorites, also in being among the first to study the Apollo lunar samples. Like others, I remember his open and engaging style, and send my condolences to his family.

Rosa Gwinn (Ph.D. 1991)

Those years spent so long ago in the igneous petrology lab with Mac and Paul have become clouded in my memory. [Although I also remember with a smile the “I thought I heard a goose” story that Sue mentioned]. I left the Brown GeoChem building and was sure that time stood still; that I could return and see Mac [door propped open with a sledgehammer], and Paul [coffee in hand], and Jan [fast as lightning coming down the hall]. Those were energetic times with a faculty communally driven to expand geological knowledge and many opportunities to work on exotic questions of magma thermodynamics and genesis. Mac’s creative genius in the lab was legendary, and the lab work offered enlightenment (and occasional frustration). None of that would be possible without Mac Rutherford and his patience and intelligence. I’m sorry he is gone, and send sincere condolences to Helen and their wonderful sons. If I close my eyes, he’s still there.

Karen Fischer (Professor)

Mac was a wonderful colleague and friend. Over decades at the lunch group, he was generous with his insights about science and life as a scientist. Hearing about his own work was fascinating, and he always answered my questions with a new angle I had not considered. He treated everyone around him with kindness and respect, and he gave great advice about what really matters. My deepest condolences to Mac’s family.

Meredith Hastings (Professor)

Mac and I beat similar paths walking or taking the bus to/from work and he was always a friendly, warm, encouraging presence (often without even a word!). His continued research efforts and generation of ideas was also always inspiring.

Irene Antonenko (Ph.D. 1999, in Planetary)

Mac was always calm and helpful, which was invaluable to a grad student. My condolences to his family.

Jim Russell (Professor, former Department Chair)

When I first arrived at Brown, I learned about a group of faculty who ate lunch together in the Ivy Room. Foremost among these were Mac and Paul Hess. I don’t work in Mac’s research area, and I drifted away from those lunches, but he always took the time to ask me how things were going. If I could sum up Mac in a single word, it would be grace.

Andrew Chaikin (B.A. Geology 1978)

I too remember Mac’s kind and gentle manner. I was lucky enough to have him both for mineralogy and field camp, both of which I thoroughly enjoyed—that is, except for the rain-soaked day I spent tromping around trying to map a very discontinuous outcrop near Hudson, N.Y. I remember when he came by I said, “This is the pits,” which gave him a good laugh and a story to tell afterwards. I’m very sorry to hear of his untimely passing and send my condolences to his family.

Paul Helfenstein (Ph.D., Geological Sciences, 1986)

Mac was a valued member of my defense committee in the 1980's. His keen insight and perspective directed me to research ideas and questions that I would not likely have otherwise considered. He was a kind, thoughtful person and I enjoyed occasionally running into him at conferences after I moved on with my career. I truly admire his scientific dedication and zeal as well as his continued commitment to guiding students even throughout his retirement years – an exemplary scientist for all of us to remember.

Chris Huber (Professor)

I first heard about Mac's work as an undergraduate student in Switzerland. I was in the field in Colorado for the summer working on the Oligocene ignimbrite flare-up in the San Juan's. There was one publication that we returned to almost daily while trying to understand the state of the magmatic system there before the eruption, it was one of Mac's amazing experimental petrology papers. Many years later, during my interview at Brown, Mac and I discussed sulfur diffusion in magmas, his patience, knowledge and excitement for science were contagious. I am grateful for every discussion we had.

Devra Wexler (B.A. Geological Sciences, 1997)

I am so very sorry and incredibly sad to hear of Mac's passing. He was the kindest, warmest man. His quiet, gentle manner could have hidden his intellect and enthusiasm but both were evident in his teaching. I would have loved to share with him stories of my recent visit to Hawaii, where I finally fulfilled a lifelong dream of standing on Mauna Kea and hiking at Kilauea. My condolences to his family, and to his entire Brown family as well.

Victor Tsai (Professor)

I did not know Mac well, having joined Brown only in the past 4 years. But he always had a smile in the hallway. My heartfelt condolences.

Nick Dygert (Ph.D., 2015)

I met Mac at LPSC this year and enjoyed a long conversation with him after a day's worth of lunar sessions. He was his usual self, full of energy, enthusiasm, and good humor. He was a positive force in my life, the archetypal healthy, happy, productive academic. I look up to him as a role model, and I will miss him.

Gil Ghatan (Sc.B. 2003, Sc.M. 2004)

I am saddened to hear about Mac's passing. I had the pleasure of getting to know Mac while I was an undergraduate from '99-'03. As a senior, I helped organize the undergraduate spring break field trip, which that year was to the audacious destination of Hawaii. In thinking about which faculty member to invite to head up a group of 20 or so students to the Big Island, it quickly became clear that Mac stood above all others. On the trip he maintained his general understated persona, allowing the students to take the lead. One memorable Mac moment occurred during our nighttime visit to the active

flows along Kilauea. Like the young and eager budding geologists that we were, many of us brought along our rock hammers thinking we might dip them into the toe of an active flow (I chickened out). I recall Mac borrowing a hammer and showing us all his inner child by pulling some lava off the edge of a flow, quickly followed by a characteristic Mac quip of “well, I used to have hair on my legs.” Sending warm thoughts to all those who were lucky enough to have shared some time with Mac.

Shirley Rawson (Sc.B. Geological Sciences, 1975)

Mac is part of my most favorite memories of being a Brown undergraduate. In recalling Mac’s quiet, clear, and kind mentoring, I see what a significant influence he had on my scientific development. As senior thesis advisor, he introduced me to lunar petrology and lunar pyroxene mineralogy, and gave me an opportunity to conduct experimental petrology in his lab. A memorable field trip to Newfoundland to explore ophiolites influenced my research after Brown. When we met occasionally at AGU or GSA meetings over the years, he always had a good word to say or a recollection to share. Mac had a true gift for bringing out the best in people, and my life has been enriched for knowing him. I send heartfelt love to his family and loved ones.

Fatma Khatib (Sc.B. 2005)

As the GeoChem building became a home-away-from-home for me, Mac was one of the kind and friendly faces I got to bump into frequently in the department, always smiling. It has been an honor to be one of his students, and my fondest memory of him will always be our Spring Break field trip to Hawaii, learning out in the field during the day, and having a conversation as we sat around the fire at nights. My deepest condolences to his family.

Larry Lundgren (1953 - Gotenburg, Sweden)

As perhaps the oldest living undergraduate geology major - class of 1953, now 91 writing from sweden, I have enjoyed reading the tribute to Mac Rutherford - knew Jan Tullis long ago - and especially enjoyed reading about someone who worked in so many different areas connected to petrology. Thanks to all of you who have written virtual cards telling me about Mac's humanity. In the end that is what counts most no matter what the scientific accomplishments. That was true for my Professor so long ago, Alonzo Quinn who guided me so thoughtfully from the beginning to the end.

Tina Neal (Sc.B. '81 - Director, U.S. Geological Survey, Volcano Science Center)

Warm memories of Mac teaching Geo 3 in Rhode Island Hall to this wide-eyed undergrad who was falling fast in love with geology, and also thinking of Mars, the Moon, and earthly volcanoes. His calm, slow, steady delivery in front of the class, using chalk on a board (!) to draw plots and write reactions, Mac was a gentle and nurturing teacher in my memory. In later years when I’d visit campus or see him

at AGU, he was always kind and curious about my life. I walk among many scientists carrying on Mac's work deciphering how the earth works.. Aloha and thanks, Mac.

Gloria Correra (Administrative Assistant 1993-2020)

I had the pleasure of working with Mac as his administrative assistant for many years. He would come into my office and tell me stories of his youth in Canada, and how he would go hunting before going to school in the morning. He spoke lovingly about his family and his visits to Manhattan to see his grandchildren. He had a great sense of humor and was always so kind. He will be missed. My heartfelt sympathy to his family and to all who loved Mac.

Ben Chilson-Parks (Ph.D., 2019)

I am beyond humbled to have received Mac's generosity and patience in my time at Brown. Prior to becoming a Ph.D. student, Alberto and Mac gave me the chance to become a part time research assistant. Mac and I ran a handful of sulfur solubility experiments on his internally heated pressure vessel, known as "Bertha". Working with Mac was my first exposure to the world of experimental petrology, and Mac's joie de vivre in the lab made my climbing the learning curve enjoyable and empowering. I like to think his mentorship reverberates in what I do now, especially when I can help a student get their foot in the door. Although I ended up working with Alberto as a Ph.D. student after that, the memories and skills that I gained from Mac have remained precious. I send my love and appreciation to Mac and my condolences to those close to him.

Marie Johnson (Ph.D. 1990)

I did not go to Brown so much as to Mac's experimental petrology lab. In my mind, Mac = Brown. I love that I learned so many practical skills in his lab. When I first bought a house, I did all kinds of home repair/home improvement tasks because I had learned how in Mac's lab. When Mac was very pleased with a lab repair job, he would say, "Yup, a real farmer's fix, there." And I knew that was high praise. I live in California now but I took great comfort knowing Mac was roaming the halls of the GeoChem building. I hate that he has left us and we all must carry on. Special hugs to Helen, Brian, Tim, and Greg.

Yongsong Huang (Professor)

Mac's passing was a huge shock to me. We had a very nice conversation at LPSC this year, and he looked perfectly fine. Our research did not cross paths, but we had many wonderful conversations, although mostly not related to academic research. He had great insights to the stock markets and investments. I will miss him.

Colleen Dalton (Sc.B. 2000, Professor)

I took Geochemistry with Mac during my freshman year; I remember him as a kind and effective teacher. And when I returned to Brown in 2014, I would sometimes join the Ivy Room lunch crew, of which Mac was a regular. As a colleague, he was just as kind and helpful. My heartfelt condolences to his family.

Ren-Horng Wang (A.B. 2006)

I took Geo 23 that he co-taught with Peter. I remember Mac as always being kind and having advice about researching what drew me to geology - volcanoes! He will most definitely be missed.

A. Bowdoin Van Riper (A.B., Geological Sciences & History, 1985)

Mac co-taught, with Peter Gromet, the intro geochemistry class (then Geo 3) that I took in the spring of '82. I was -- to put it charitably -- a hapless geochemist, and the material felt far removed from the things that drew me to the field, but Mac was endlessly patient and kind in dealing with our (well, *my*) cluelessness, genuinely concerned not just with covering the material but with conveying the wonders that awaited us as we mastered it and moved deeper into geology. My own academic trajectory turned out to lay elsewhere, but I am a better teacher, a better scholar, and a better person for having known him.

Amateka K. Morgan (A.B., Geology-Physics-Math, 1978)

Professor Rutherford was one of my dearest professors. There is no slight to the other wonderful teachers of earth science who grace the halls of my personal parthenon of all the teachers I ever had. Professor Rutherford was special to me because in addition to expanding my insight of geology as a basket of physical and mathematical sciences, it was Professor Rutherford who provided an umbrella of protection and security for me. It was in the Fall Semester 1976, while Geology 109, Mapping and Stratigraphy students from Brown University were mapping The Onandaga and Manlius Formations in upstate New York. There can always be hostility to strangers in rural areas, however I am African-American. Mac made it overwhelmingly clear that he was not tolerating any special brand of hostility when we went out one evening to the local town. I honor and appreciate you Professor Mac Rutherford for what you did. I will be a 'Geo-Scientist' forever.

Jim Head (Professor)

Mac Rutherford was one of the kindest people that I have known in my professional career, unassuming, but hugely authoritative and knowledgeable in his field. Speaking as a planetary geoscientist, I have learned more from Mac through his patient and understanding discourse, than almost anyone else in my professional career. He always patiently engaged in responding to the most basic of questions, and this trait resulted in education of his students and peers in the most fundamental of ways. Mac was a true

trailblazer in lunar petrology, and his passing leaves a huge void in the field. We can only emulate Mac's wonderful traits to carry his memory into the future.

Steve Getty (Ph.D.)

Mac and his lab's exciting petrology work was one of the reasons that I came to study at Brown. I was always impressed with his calm demeanor, approach to exploring important scientific questions, as well as his mentoring and support of students. Mac's work and contributions to all in the Brown and scientific communities are hugely appreciated!

Tom Kiefer (DEEPS Machinist)

Mac was very helpful, understanding and friendly. I enjoyed doing his projects with him. He was one of the easiest people to work with and i will miss working with him.

Grace Brion (Grants and Finance Coordinator)

As I joined Brown this year, I had only a few conversations with Mac; he was kind and helpful in all of them. My thoughts and sympathies for everyone who knew him well.

Suzanne Mahlburg Kay (Ph.D.)

I will always remember Mac Rutherford and his family as among my closest friends as I was doing my Ph.D. at Brown in the 1970's. Mac was on my committee and a close advisor on research and scientific interests, particularly when my advisor, Dick Yund was in Australia. We kept in touch with Mac and Helen over the years at meetings, Brown reunions and visits to Providence. My daughter Jennifer Kay stayed at their house as a baby and was eventually in Mac's field course as a Brown student.

Bill Collins (Facilities Manager, Thin Section Lab Manager)

Mac was a great scientist and an even better human being. Above all he was my friend, and at times, a confidante. When he was born the mold was broken as in my many walks in life I have not encountered too many people with the prerequisites to life that Mac brought to the table.

I have known Mac Rutherford for a little short of 50 years. I first met him a few days after my arrival in the Department of Geological Sciences in July of 1976. I was a proud graduate of the the University of Rhode Island with a BS in Geology. Originally hired to make thin sections for departmental faculty and curate our rock and mineral collections, my aptitude for original thinking and “adventures in science (among other sundry things)” jump started my work with various faculty members’ graduate students, and their need to learn how to make thin sections for their experimental research. It was also a segue for my working with some of the faculty, directly. Mac was one of those faculty members.

My first impression of Mac was that he was a calm, soft spoken, gentleman scientist, who never got ruffled under any circumstance. And for the most part after 41 years in the department my initial opinion of him never wavered, at least until he became chairman.

Mac was appointed chairman in July of 1984, succeeding Bruno Giletti, and I could tell that things would be a little different under the “Rutherford Administration”. Bruno was generally a hands-off chairman on a lot of operational items in the department. He would provide guidance, but staff were expected to be responsible for getting the job done - except for matters of entertainment. Bruno liked a good party and wanted to make sure that attendees of a function also had a good time. In contrast to Bruno’s tenure as chair, Mac was definitely more hands on. For example, Mac wanted to effect some changes in the department. So, he and I “went on the road” in August of that year to replace the department van which was charitably described as a truck with seats in it. The vehicle, though nominally functional as transportation, was largely disdained by the faculty. Mac agreed with that assessment, and he and I quickly replaced that “troop carrier” with a new, more civilized, and soundproofed (relatively speaking) van that was more conducive to field trips.

But, it turns out that Mac liked a good party too! As you are aware, in September of each academic year we traditionally have the Chairman’s Welcoming Picnic. Back in the day we used to have that welcoming picnic at the Haffenreffer Estate in Bristol Rhode Island. Brown at the time owned the Haffenreffer Estate, and it housed the Haffenreffer Museum, and the Haffenreffer Outing Center at which we annually held said picnic.

Back then, in addition to a cold cut buffet, we provided alcoholic beverages in the form of beer and wine as well as soda and water. And back then, this was generally considered

a “2 keg event”, with nominally ~110 participants attending. This of course would necessitate providing cups, for both beer and wine, as well as cups for soda and water. We also provided ample amounts of ice. Lots and lots of ice. Ice to put in drinks, and ice to literally “ice down” the beverages, or anything else that needed or could use ice.

The party would start around 4:00 PM and end no later than 8:30 PM as we would lose daylight at around that time in early September. We needed to clean up the Outing Center and grounds, and secure it before we left. So at around 8:00 PM I usually organized a cleanup crew, mostly grad students who needed rides back to Providence. I would drag the remaining ice bags out onto the back porch, which was a slatted deck with perimeter bench seating. I would simply empty the ice bags out onto it, allowing the ice to melt and drain away. This particular year there was over 100 pounds of left over ice. To be sure it was over ordered, but the weather was warmer than normal that year, and you often can't predict the temperature in early September anyway. Besides, the cost was acceptable, and I wanted to be sure we had more than enough, rather than to run out. I went to check on the progress of the cleanup crew, and Helen, Mac's wife approached me inquiring where to find Mac as she was waiting to go home. I told her that I would find him for her.

I looked around near the rear entrance by the kitchen, and someone told me that Mac was out on the back deck. I headed for the deck, and as I got closer I could hear a lot of ruckus. It was getting dark, and I could not make out the participants through the sliding glass doors of the Outing Center. When I arrived, there was a group of students hooting, and laughing profusely, egging on two 6 foot plus, equally athletic men, one twenty-something, Jonathan Overpeck, one of Tom Webb's new graduate students, and one thirty-something, Malcolm Rutherford, Professor, and department chair, wrestling in a pile of ice. The two of them were soaked, laughing like young children, and totally hammered!

I managed to break up the merriment, and get the two of them on their feet, and on their way. I recall saying to my wife on the way home that “I really like Mac, he's my kind of chairman”.

About 5 years later I was working in the photographic darkroom on the first floor of Geo/Chem. At the time I was preparing some slides for teaching using a 35 mm camera mounted on a copy stand. There was a thud-like sound, and the building shook. There were a lot of things that happened regularly in Geo/Chem - literally “never a dull moment”, but this one was different. I remember getting out of the darkroom as quickly as I could, and asking people in the corridor as to what happened. I was directed to the basement. There had been an explosion in GCO10 - Mac's lab. Rosa Gwinn, Mac's graduate student was coming through the door at the time of the explosion, and the door impacted her, and deformed around her body. Mac was blasted face first onto the

concrete floor by the concussion wave. It was the blast that shook the building. There had been a Hydrogen leak from a tank valve in the rear of GCO10. Hydrogen being lighter than air collected in the waffling of the ceiling and at some point when it reached a combustible concentration, it ignited.

When I arrived at GCO10, I called EH&S. Emergency Services had already been called for Rosa and Mac. I was able to talk with Mac at some point afterward, and he told me that it happened so quickly after he realized that the valve was leaking, but he was unable to shoo people, including himself, out of the lab before the Hydrogen detonated.

That explosion affected him deeply. He was very concerned for Rosa's wellbeing, but he also took quite a hit himself. I'm sure the event was always in the back of his mind while working in the lab thereafter. The event also affected me in that it instigated me to assume responsibilities as the safety officer for the department. It affected every facet of my involvement of working in my lab, and department lab operations, construction, and planning moving forward.

I was shocked to hear of Mac's passing last month. We had a chance to catch up a bit when I was back to the department at the end of March and was looking forward to spending some time with him "in his new office" when I came came up again three weeks ago to run the volcano demos. But that didn't happen, and that's regrettable.

Mac always made time for me. I remember when Pete Schultz and I traveled to Argentina in search of the "wild grazer asteroid", I approached Mac about prepping samples for microprobe analysis. Mac was happy to help, and took the time to show me the ropes of sample prep for which I was most appreciative as I had never had a reason to use a sample furnace in the past. He made the learning and experience curves a lot less steep!

The year my mother passed away was also the year my father needed quadruple by-pass surgery. Post surgery, the week that he was in recovery and in ICU at Miriam Hospital, I walked Mac home a few days as the hospital is on the same street where the Rutherford's live. We talked about a plethora of things along the way and he afforded me an opportunity to decompress as 1988 was a really rough year for me. His kindness and sensitivity will never be forgotten.

Since retiring I have kept in contact with many friends at DEEPS, not on a day to day, or even week to week basis, but in short bursts. On occasion I would email science articles to Mac seeking his opinion. He always took the time to get back to me. Mac has been a great influence on my life that will sorely be missed.

And unfortunately we will never get to see: *Overpeck vs. Rutherford II - the Rematch.*

Jan Tullis (Professor)

I appreciate the opportunity to share a few memories of Mac. He was one of the kindest people I have known, and I am so lucky to have had him as a friend and colleague for over 50 years – we both came to Brown in 1970.

In the early 70's the department was expanding from a small and more 'traditional' geoscience department into very new research areas – including a stratigrapher who worked on extraterrestrial sediments, a mineralogist who did diffusion & kinetics experiments, and structural geologists and petrologists who did theoretical modeling as well as lab experiments. (I recall one admitted grad student exclaiming 'this isn't geology'!) Mac was an integral part of this cutting edge approach, especially in his creative and long productive partnership with Paul Hess.

Mac was also one of the small group of faculty in the early 70s who established the very special culture that has been so important to our department's strength over the years – a commitment to collaboration and consensus-seeking, to building community while defining new directions. Mac personally defined those values, and promoted them when he served two terms as chairman. One small example of that strong community was the daily group lunch of many faculty at the Ivy Room – a chance to talk about all sorts of things, from science to politics to sports. Mac tended to be slow to verbalize and Paul tended to jump in - but Mac would just smile and pick up and continue.

I also have fond memories of other aspects of those earlier days when our department (and the university) was much smaller. I know Helen will also remember that faculty wives were expected to bring home-made casseroles for our fall and spring picnics (held at Haffenreffer), and to bring the dessert items and staff the tables for our graduation reception.

Mac was a dedicated gardener, and I have happy memories of Mac and Helen and other faculty such as Dick & Ginny Yund tending their parts of our big vegetable garden in Rehoboth – and joining volleyball games in the Pembroke gym, as well as outdoor ice skating get-togethers. Mac continued growing fruits and veggies in their backyard, despite damage from bluejays and squirrels – and sometimes brought in a small bowl of delicious raspberries to share, such a treat!

Mac was an enthusiastic and caring teacher. He developed a freshman 'modes of thought' course as part of the 'new' curriculum. He loved field trips and field work, and for many years he taught our fall semester field course, mostly in eastern NY state. His creatively fortified breakfast oatmeal was always one of the highlights for students. He generously gave some of his course materials to Blake this semester (although maybe not the oatmeal recipe).

Mac was enthusiastically supportive of grad students and undergrads who did research projects with him, he was always generous with help and advice to alums and colleagues, and he remained actively engaged in research questions and lab work long after his `retirement'. As both of us retired and moved into adjacent offices, I looked forward to seeing him almost every day. He was always devoted to his family, and enjoyed sharing stories about his grandchildren, and showing me amazing bird photos that Brian had taken.

Mac was patient, kind, and generous, a totally positive can-do person. He was genuinely interested in others – a great listener and a fun story teller - and he truly did bring out the best in people.

Academic life can be busy and sometimes stressful, with pressures to get grants and publish papers while teaching and doing the ever-increasing administrative work. But especially as we get older, we realize that what is most important in life are the human relationships, the community one is part of. Mac was truly special in his generosity and support to every person whose life he touched. He was a major factor in creating and maintaining the collegial culture of our department while at the same time doing cutting edge research in volcanology and planetary geology.

He was a dear and treasured colleague and friend, and I miss him very much – but he enriched all of our lives, and in that way he is still with us.

Remembering Malcolm "Mac" Rutherford

By Julia Hammer, Yan Liang, Jan Tullis, Greg Hirth, and other DEEPS Colleagues

Malcolm "Mac" Rutherford, professor of Earth, Environmental and Planetary Sciences emeritus, passed away unexpectedly on October 3, 2023, in Providence, Rhode Island, at the age of 84.

Born in Durham, Ontario, Canada, Mac grew up in Saskatchewan and studied Engineering at the University of Saskatchewan (B.Sc. 1961). He turned toward geology after carrying out fieldwork for a mining company. He received his Ph.D. from Johns Hopkins University in 1968. After a brief postdoctoral appointment at the University of California at Los Angeles, he joined the faculty at Brown University in 1970 and taught courses on field geology, geologic hazards, volcanology, meteorites, and igneous petrology. Mac retired in 2006 but continued to engage in advising and research at Brown until the very end. His last experiment was run on September 4, 2023.

Mac had a distinguished career and was a world expert on volcanic rocks from Earth, Mars, and the Moon. His early-career scientific interests were shaped by two events on the world stage: the NASA Apollo program and the 1980 eruption of Mount St. Helens. The latter motivated a sequence of pivotal contributions, culminating in an integrated experimental and field approach for placing crucial constraints on the environmental conditions at which magmas were stored underground prior to eruption and the rate at which magma ascends to the surface. He applied this approach to eruptions of Mount St. Helens, Soufriere Hills Volcano, El Chichón, Pinatubo, Campi Flegrei, Novarupta, Unzen, Mazama, Black Butte, and other volcanos. His method was embraced by the volcanological community and has become a part of 'petrologic monitoring' of restless volcanoes.

The return of Apollo samples inspired Mac to embark on a series of experimental investigations of phase equilibria of lunar magmas. This led to fundamental contributions to our knowledge of silicate liquid immiscibility, the origin of lunar granite, the differentiation of lunar magmas, and the solubility of sulfur in mare basalts. He played a pivotal role in the study of the origin, speciation, and concentrations of volatiles in the lunar interior. While continuing to work on magmatic processes on the Moon and Earth, Mac studied Martian meteorites in his later years, exploring their petrogenesis, oxidation state, surface alteration, and relationships to spectral properties of the surface of Mars, which is crucial to the interpretation of remote sensing data from Mars.

Mac was a Fellow of the Mineralogical Society of America. He served as Chair of the Department of Geological Sciences (1986-1991), Co-Editor-in-Chief for the Journal of Volcanology and Geothermal Research (2009-2012), and as chair or member on countless NASA, AGU, and University committees and panels. Mac was generous and supportive of his colleagues and students. He fostered a warm, collaborative research group and mentored dozens of students and postdocs who went on to NASA, university faculties, the United States Geological Survey, federal labs, and industry. He was keen to lead geological field trips and was an avid participant in the Lunar and Planetary Science Conferences. His legacy of science and mentoring extends to all corners of the Earth and across the solar system.

Mac is survived by his wife Helen, and three sons, Brian Rutherford, Tim Rutherford and his wife Lisa, and Greg Rutherford and his wife Natasha, as well as his three grandchildren, Brooke, William, and Cameron, and his two siblings, Kay Hilborn and Don Rutherford.