Working with Julio Bouillet

-La consigne n'a pas changé, dit l'allumeur. C'est bien là le drame!
La planète d'année en année a tourné plus vite, et la consigne n'a pas changé!
... -Celui-là est le seul dont j'eusse pu faire mon ami.
A. de Saint Exupéry, *Le Petit Prince*

Julio Esteban Bouillet was born on may 7, 1942, in Buenos Aires, where he died an untimely death at the age of 52, on September 8, 1994.

He was very attached to his childhood memories, where his french grandfather played an important role, at a time in which taste and refinement had their place in everyday life. As a representative of those of his generation who made the (often regretted) decision to return home after concluding a Ph.D abroad, his life was inter-twine with the political unsteadiness of his home country. Because of his concern for the developement of the Argentinian mathematical community, his high standards and his strict ethics, he was often requested to take on responsability in the admin-istration of the Universities where he was working. Already as graduate students, he and Lázaro ("Coco") Recht were representatives at the department council. As so frequently in this country, which later one of his fellows mathematicians would describe as "having very high entropy", their ideas concerning the organization of the graduate school and logistic issues concerning tuition are still relevant today.

After receiving his PhD. at The University of Minnesota with Gene Fabes, he returned to what would become later the University of Salta, where he already had had an appointment before heading to the US for his PhD. There, he was for the first time involved in establishing the contents of the studies plan and the syllabus of the courses, while also representing the Math. Dept. at the University's research council. During his time in Salta he collaborated with Colin Atkinson and with mathematicians and engineers of the University of Salta.

Seven years later he moved back to Buenos Aires, where he eventually carried what he experienced as the hardest tasks in service of the math department. He became the representative of his department at the Council of the School of Science in the early times of democracy after the military regime, at a time when the Uni-versity needed to find its way back to its legal organization. About one year later he became acting chairman for some year and a half, after he was appointed deputy chairman. During this time, if not earlier, it became clear to him that political ideas weren't what divided people but their class and their standards. After one of many discussion with the Dean he resigned his chairmanship. The dean never

acknowledged receiving his resignation letter, forcing him this way to continue as chair.

As part of his commitment to the developement of mathematics in Argentina, he frequently taught special and summer courses in universities and institutes around the country, and took part in the organization of local workshops and seminars.

Of his mathematical work my favorites are his uniqueness results for nonlinear diffusion equations, both only published in congress proceedings: in 1987 Free Boundary Problems (Pitman 1990) and Differential Equations in Banach Spaces, (Bologna meeting) (M. Dekker 1993). He acknowledged the influence of Carlos Kenig and Philippe Bénilan's on his work, and he followed Luis Caffarelli's work with interest. It is fair to say that when looking for his best problems, one should look into his student's theses, and even licentiate's theses (he was one of the first of our department to give out original problems for the licentiate's thesis). Many of these were eventually published or communicated at congresses; he would never be a coauthor. Often, his student's works extended his previous results and insights, making it unattractive for him to publish the original result. After his death, his students found their papers and preprints attracting the interest of Julio's colleagues.

Julio experienced the abstract methods in fashion during his student years at the math deptartment in Buenos Aires as handicapping his intuition. Combined with his early interest in geometry, this evolved into supporting his quests into the qualitative and geometric behaviour of solutions of PDE, as a way of deepening one's understanding. Consistently, he insisted one should follow one's intuition, keeping notes of resistant problems to come back to them after some time. He was supportive of independent thinking, never dismissing a new approach, even if for some time it would seem to lead nowhere.

When some new student knocked on his door asking him to become his advisor, he would never be concerned about previous records, but would be very demanding in the student's committment to work and to math. He was a great teacher for rebels and late boomers, although he certainly enjoyed working with a brilliant student. If some of them would not show up for a week he would get a phone call which immediately evolved into a math discussion. In this way most of us soon found it more comfortable to look him up at least once a week, to find out that in fact getting his quick feedback on what we were doing was stimulating and time saving. Resenting the conditions amongst a very small mathematical community, he used to complain about lacking coworkers, and worked as an advisor with the expectation of raising them. In the end, this never came to pass as my fellow students went their own way, and he decided I needed to work with other mathematicians after concluding my PhD.

His curiosity concerning how the material world "works" found its place in the meetings he had with engineers, meteorologists and physicists in his office. He found stimulation and excitement in these discussions especially when they would leave with some hint or some reference. During his times in Salta he published several joint papers with engineers.

Concerning his teaching, I remember a time as a student when I got some result I had to work hard for and felt I deserved some recogntion. I asked, and the answer I got was, "go out in the world, meet your peers, find out which placement they grant you among them. That, you should call your standard and the feedback you are looking for." Years after I went out in the world to meet my peers and learn more math, I found his guidelines most rewarding, even though they were a high bar. The other teaching I took along forever was, "trust your intuition and your taste, they are your main tools. Never think a problem is too good for you, because you aren't a big name or because of the isolation you are working in, with so very poor libraries at hand, and you won't be able to solve it or someone better will be quicker. That was the choice I made, and I can tell for sure that the frustration of failing or finding out that someone else was quicker is better than being conscious of not having dared to try." Among the people I met out there in the world, most found this advice too audacious and said they wouldn't share this point of view. Following his advice resulted in making work most pleasant, and thinking most independent and creative.

Julio was a great music lover and connoisseur. During his years of graduate studies in Minneapolis he studied piano sight reading. At some point he thought about staying with piano and quitting math. Later, back in Buenos Aires he took traverse flute lessons. His favorite pieces constituted an ecclectic repertoire where there was place for hot jazz, romantic pieces for piano (top favorite were Mendelssohn's Lieder ohne Worte) and Erik Satie. He only deeply disliked opera and the human voice - except for Josephine Baker's! He was as ecclectic concerning literature, where his favorites were Cortázar, Ovid and Perry Mason, which he gave me to read along with maths articles. He owned a fantastic tango collection on 88 rpm records, from about 1890 to 1940, including some treasures one would not find in the collections of the National Institute of Musicology, and some corresponding original edition scores. One of his great weekend pleasures would be listening (and whistling) to his favorite old tangos, with score in hand. This was also the reason for his interest in the traverse flute, as being one of the instruments of the original tango ensemble. He was also talented at sketching and very good in water color technique. Besides, he loved to work with his hands, and was an accurate and tasteful carpenter.

After he found out he was ill with no survival chances further than a couple of months, he concentrated on teaching and working intensively for the mathematical community, while relying on alternative medicine for his health and quality of life care, and taking time for his personal happyness. When it already seemed that living with melanoma was just a question of some extra logistics after a year of his diagnosis, he became ill and died some twelve days later. I remember sticking on his office door at the math department a sign he made, instructing his students to read by themselves what was on schedule for that day's lecture; in the beginning of his illness we thought he had a flu. During this time he was always self sufficient, his friend Coco from his early times at the department council called and they said goodbye, each knowing what they meant by that. He wrote and signed a letter for

the academic secretary of the school of science resigning his place as a juror in some hiring comittee for one could die, but the school of science should not run into more bureaucratic trouble. The day before his death, free of fever and pain, he called his elder children, opened the door himself and talked to them sitting crossed legs in the rocking chair, giving them the advice to dare to go for their personal happiness. It just didn't look like the physician was right that this guy would hardly see more days- he died at home the night of the next day, amongst his family and close friends, after playing all the afternoon with his grandaughter and his youngest daughter, the way he lived: with class and dignity.

Marianne Korten, october 1998.