Carlos Gutiérrez (1944–2008)

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The professional distinction that Carlos Gutiérrez attained as a mathematician and university professor is well-documented in the reviews of his mathematical works[1] and in his *curriculum vitae.*[2] I will focus here on personal recollections of the early steps of his mathematical career.

Carlos Gutiérrez was born in Ayacucho,[3] Perú. He received his higher education in Lima at Universidad Nacional de Educación *Enrique Guzmán y Valle, "La Cantuta",* where he received the degree of "Licenciado en Matemáticas" in 1964. From 1965 to 1968 he held the position of Mathematics Teacher at the National "San Ramón" High School in his home town. During this period he attended several summer schools devoted to the improvement of Peruvian mathematics teachers, which were held in Lima under the leadership of the Peruvian educator and mathematician José Tola Pasquel (1914–1989), founder of the Peruvian School of Modern Mathematics.[4] In this project, Tola had the assistance of a team of very active and energetic distinguished faculty members from São Marcos and the Engineering National Universities, among whom were Gerardo Ramos and César Carranza. I helped as a Teaching Assistant in the summer of 1963 and (after I earned my Ph.D.) as an Instructor in 1965.

By 1968, this project evolved into the Regional School of Mathematics (RSM) whose aim was to improve the education of university instructors in Perú and other Latin American countries. The RSM had the support of the Organization of American States (OAS), which granted some fellowships;[5] and, the RCM also provided an opportunity to upgrade the most promising Peruvian high school teachers to university instructors. Carlos was selected to be in this group.

Intensive courses and seminars at the RSM were running continuously in the following years. I met Carlos in a course on ordinary differential equations that I taught there in 1968.

While Carlos was not my only A^+ student, he distinguished himself from the other RSM fellows by being the only one able to write original proofs in homework assignments.

After his training in the RSM, which amounted to a solid undergraduate mathematical education,[6] Carlos was awarded an OAS fellowship to pursue a masters degree at IMPA in Rio de Janeiro starting in August 1969. This was the key step that took Carlos to a higher level of mathematical awareness. It put him in contact with active research mathematicians, in favorable financial and environmental conditions to pursue studies in advanced mathematics, and gave him the opportunity to attack research problems. The mathematical seeds planted in Ayacucho, "La Cantuta," and the RSM,

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[1] http://ams.impa.br/mathscinet/search/author.html?mrauthid=197408

[2] http://buscatextual.cnpq.br/buscatextual/visualizacv.jsp?id=K4783934U5

[3] http:// www.geocities.com/peru_ayacucho/

[4] It seems that, except for an article in Wikipedia, there is no written analysis of the influence that this remarkable man had on Peruvian mathematics and culture. I write in capitals Tola's Modern Mathematics to distinguish it from the other much softer and superficial approach, with the same name, which pervaded Normal and High Schools in Perú.

[5] Incidentally, I know—because Tola told me—how these grants arrived in Perú. The OAS funds were originally to be allocated only to two of the most mathematically advanced centers of the continent: Rio de Janeiro and Buenos Aires. The argument for this limitation was that research mathematicians of the level of "So and So" resided there. Tola successfully countered that if this condition were perpetuated, places like Perú and its less developed neighbors would never be able to train people to reach the high level of such distinguished researchers.

[6] I must add that the emphasis of his " La Cantuta Licenciatura" studies was more in pedagogy than in mathematics.

germinated and began to flourish.

Carlos obtained his Master Diploma in 1971, was accepted in the Doctoral Program at IMPA in the same year, and earned his Ph.D. in 1974. He visited the University of California at Berkeley (1976–1978) and the California Institute of Technology at Pasadena (1985–1986) as a CNPq Post Doctoral Fellow, where he worked in close contact with Charles Pugh (at Berkeley) and Anatole Katok (at Cal Tech).

The mature branches of Carlos' mathematical career stemmed, fructified, and spread new seeds at the Instituto de Ciências Matemáticas e Computação of the University of São Paulo...

He was elected Member of the Brazilian Academy of Sciences in 1996; and, he was decorated with the National Order of Scientific Merit by the President of Brazil in 2002.

In the speech he made on the occasion of the wonderful *Fest* he organized to commemorate my 60th birthday, Carlos said that he was proud to have had me as his mathematics advisor and thesis director. I am privileged to have had him as a student, colleague, collaborator, and friend. We shared ideas and mathematical interests, some of which I learned, or absorbed, from Mauricio Peixoto, the founder of the Brazilian School of Dynamical Systems.

Carlos Gutiérrez passed away on 3 December 2008 after a grave and painful illness. While I write these lines as a tribute to his memory and as a sorrowful duty, [7] I am fully aware that the proper tribute to the highly original and insightful mathematician that Carlos was, would be an organization of his extensive work complemented with an analysis of its influence and a discussion of its possible repercussions. This remains an arduous and, for the moment, overwhelming challenge.

His work and career should be an inspiration for future generations.

Let The Lord have him ...

December 7, 2008.

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[7]I write in English because I think that his many friends and collaborators abroad, who held him in high esteem, may like to know more about his early background. Free translations and adaptations of this essay, respectively to Portuguese and to Spanish, will be published in *Matemática Universitária, 43, 2008,* and in *Boletin de la Sociedad Matemática Peruana, 31, 2008.*