

2-1-1995

In Memory of Stavros Busenberg

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Recommended Citation

Martelli, Mario; Wake, Graeme; Coleman, Courtney; and Aczon, Melissa (1995) "In Memory of Stavros Busenberg," *Humanistic Mathematics Network Journal*: Iss. 11, Article 4.

Available at: <http://scholarship.claremont.edu/hmnj/vol1/iss11/4>

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Our colleague, Stavros Busenberg succumbed to Lou Gehrig's disease last year at the age of 51. There was an outpouring of shock and sadness from around the world. Friends and colleagues came from great distances to participate in his memorial services.

The following year 200 colleagues, collaborators and friends joined in a four day international conference at Harvey Mudd College on mathematics, mathematical biology and other topics of interest to Stavros. It was a tribute to the energy and scope of his contributions and to the great esteem and affection with which he was regarded.

In memory of Stavros Busenberg

*Mario Martelli
Harvey Mudd College
Claremont, CA*

He was my best friend in the USA. With him I felt at home, like in Florence. We spoke Italian to each other, we talked about Italian literature, which he knew quite well, and every Thursday we went together to the Italian table at the Oldenburg center. We spoke Italian when we were doing research or we were talking about difficulties we found in teaching certain topics or strategies we had devised for achieving clarity and effectiveness in our lectures. We were frequently the first to arrive in the morning at the department and the last to leave in the evening. Many times our day together did not end with the words "Ciao a domani (see you tomorrow)", said before the short ride back home, because we called each other after dinner, if a new idea or a new question had crossed our mind. He always told me: "Mario, we will do great things together". He was right, except for the time.

We have done great things together. One was the organization of the 1990 International Meeting to honor a common friend, Ken Cooke, in his 65th birthday. I still remember when on the final day of the meeting, after the last talk, Stavros took the stand and said: "See you all at the turn of the century for another great meeting in Claremont". At that time I would have never imagined that the next International Meeting in Claremont would come only four years after the one in 1990 and would be in memory of Stavros. We worked side by side for the success of the meeting in honor of Ken, and we devoted several months and a lot of energy to edit two beautiful volumes of proceedings. Many participants have repeatedly told us that they have great memories of the meeting and many colleagues have expressed their admiration for the volumes. Springer-Verlag

printed a poster to publicize one of them. Stavros and I also obtained some remarkable results. He talked about them in Europe, in China, in New Zealand. Back in Claremont from these trips, he would always tell me: "Mario, people really like the results. Everybody says that they are really beautiful. We must collect them in a book". We started planning it, we wrote the scheme and a few pages. We could not finish it, because Stavros left too soon.

What was amazing for me was the energy and versatility Stavros had. One day we would work together. The next day he would work with his students. The day after he had a visitor and they were working on another problem. Then came his work with Kenneth Cooke. Stavros' knowledge of mathematics was by far deeper than one could have expected in a first rate professional. He had an open mind for new ideas, new methods, and modern technology. TeX and LaTeX came and Stavros learned them immediately. Electronic mail came and Stavros was among the first to use it. Chaos theory was still in its infancy and Stavros already knew almost everything about it. I don't know how he could find the time to learn and master so many different things.

He has left in my life an empty space that will never be filled. Sometimes when I look back at my notes I find a page or two written by him while we were working together. I stop and go back with my memory to those beautiful days and it seems almost impossible that he is not with us anymore. Holding that piece of paper I almost hear his voice, I see his gestures, I look at him writing. I see Stavros and myself going to the photocopy

machine to make an extra copy for him or for me.

Our families were very close. We all enjoyed each others' company immensely. The toy railway Stavros built for his two sons, George and John, and all the equipment that came with it, became the toy railway of my son Teddy. It is still under the porch of my house and my youngest daughter Lisa plays with it. I still remember the many times Stavros brought me apricots or figs from his backyard. He knew that I like these fruits and he never forgot to pick some for me. We never came around to make some wine together, That was one of the projects we promised each other to do "when we had time". Unfortunately that time has never come.

An Italian poet has written:

We are
like leaves
on trees
in the Fall.

How true that is! Every leaf is going to fall, but surely Stavros, for some destiny which is hard to understand, fell too soon. He accomplished in his brief life what would have taken two lives for many others to complete. And during his brief but intense illness he gave a beautiful example of strength and dignity. My dearest friend, it has been a great privilege to have known you, and a great honor to have worked with you. I will keep your memory with me forever.

A tribute to Stavros Busenberg 1942 to 1993

*Graeme Wake
Massey University
New Zealand*

It is a pleasure to have this opportunity of writing a tribute to Professor Stavros Busenberg, late of Harvey Mudd College in Claremont. My contact with him began in 1988 when he indicated his desire to come to New Zealand as the first of three Fulbright Visiting Programs to assist in the establishment of "Mathematics-in-Industry Programs" within New Zealand. The record shows that his contribution was great and provided an example to us all in terms of achievement, professionalism, and tenacity. We endeavored to set in place during his three month stay, June through August 1989, a program of industrially funded Ph.D. projects. This is continuing in two or three places in New Zealand thanks in no small way to his input.

Stavros, Bonnie and family made their first visit to the Southern Hemisphere "the other side," or "down under" with a genuine sense of adventure towards exploring new parts previously unseen. They coped with the wet winter weather and our smallness with good humor and became our close friends and mentors as a result. It was with a deep feeling of regret and honor that I made the visit here to speak at the conference in his memory in the summer of 1994.

His contributions to our country was more than just in the professional mathematics sphere. He graced the finest aspects of the Fulbright Program with skill and was the best possible ambassador for his profession and country that could be imagined. He acquired a number of lasting contacts in New Zealand which led to ongoing publications. (I am pleased to be able to state that my Busenberg index equals unity!)

What made the work of Stavros so striking was his underlying gifts of good communication skills, clarity of thought, and sensitivity towards people and places. The hallmark of so many good mathematicians is their lack of ability to communicate with the non-mathematical community. Perhaps it was his training as an industrial mathematician, or his Southern European origin, or a combination of the two, that made him a strong exception to this rule. Stavros could communicate with anyone at any level on almost any topic. Our profession needs this skill and we're much poorer for having lost one of the leading figures in the industrial and biological mathematics scene who showed us how to do it. Of course, Stavros was an individualist with strong views but his keenness to get things done was

always tempered by his warm generous nature. He believed deeply in the Clinic experience at Harvey Mudd College and the Claremont Graduate School and was determined to see its needs influence the curriculum at Claremont.

Stavros was a great traveler and was known in

many parts. We seem to be the only place in the Southern Hemisphere to be touched by his skills at first hand. This gives me a unique way to make this tribute with affection and gratitude to one of our most dedicated, capable, and courageous members. His loss at the peak of his career is felt by all of us "down under."

In Memoriam

*Courtney Coleman
Harvey Mudd College
Claremont, CA*

Stavros was like a ball of fire—brilliant, warming, illuminating, and awesome. Wherever he spoke, seminar room, classroom, lecture hall, he filled the space with his presence. How did he do it? The trace of an accent from his childhood Greek gave a touch of the exotic to his speech. But what shone through the accent and the showmanship of writing on the blackboard with either hand, or both at once, was the searching intellect, the love of learning, the astonishing breadth of knowledge in mathematics and physics and engineering and biology and literature and language. A few years ago he learned to speak Italian because he was to spend a sabbatical semester in Italy. But for him learning Italian meant more than picking up a Berlitz book or working his way through a mathematics vocabulary. To Stavros, Italian meant going to the master, to Dante, and that is just what he did. A few years ago he started to apply

mathematical techniques to some epidemic models - so he learned biology and epidemiology. Many years ago, after he had earned degrees in mechanical engineering, he fell in love with epsilons and deltas (his Greek heritage?) and got his doctorate in mathematics. To him the world of the intellect had no boundaries. Marvelous things were out there waiting to be discovered and understood and explained and used. Applied mathematics, pure mathematics, science, engineering were all open to him and he refused to draw lines between them. His title was Professor of Mathematics, but the last two words in that title were too confining, too defining. He was truly a professor in the renaissance sense. Stavros' life will be for those of us who were privileged to work with him a shining example of humanism in the academy.

A Mentor and Friend Remembered

*Melissa Aczon
Harvey Mudd College, '93*

I first met and got to know Professor Busenberg during my sophomore year in college. He taught the very first differential equations class I took. As a teacher, he was one of the best I ever had. From the very first day, he amazed me with the energy and enthusiasm he brought to the class. He always motivated the equations and theorems, making the subject alive.

In the last semester that he was with us, I had another class with him, and I sometimes had the

chance to assist him in another one of his classes. Although I could tell he was often in pain, he was still as incredibly enthusiastic and entertaining in the classroom as ever!

Much as he was a great teacher in the classroom, he was even more incredible as a research advisor. I was very fortunate to have had the opportunity to work on research with him for almost two years.

He introduced me to the beauty and joy of

mathematical research and opened up so many new and exciting areas for me to explore. He always worked hard to help me, and as a result, he also demanded and expected a lot. I am very grateful for that because I have been able to accomplish more than I ever imagined.

Although he was demanding, he was so in quite a cheerful way that never discouraged me. I never found it hard to get excited over the work I was doing with him because his enthusiasm and energy were contagious!

I did have my moments of frustration with my research—when I was “stuck” and did not know where to go next. After research sessions with him, my questions were answered, and I felt confident I could do anything once again.

Although he often pushed me hard, he also understood my difficulties, not only with my research project but with my other school work as well. He always asked me how my other classes and activities were going and listened to me while I talked about them. When I needed extra time to work on my other classes, he gave me time off from research.

He became not only my mentor, but my friend also. He readily offered advice when I needed it, whether it was for research, classes, summer work opportunities, or graduate school. He was one of the few professors I knew who truly cared about his students. He certainly took very good care of me.

Poetry by Lee Goldstein

Mathematizing

Mathematics begins
Upon a denominative
Foundation,
Where the forleading nonverbal
Is in place,
And when a verbal undifferencing
Is eliminative,
Then the symbolic shift
Does take.

—1993

Mentalism

Spiral of the belike,
Hoping of a like to be at the spiral center
Where the avoidant dislike is the reality principle
And is typically assumed to be from outside,
But where a dislike might, too, be about the center;
And there is the reality within,
And of that spiral wish,
When the dislike, he or she might convert it,
At least, as the spiral, into the neither like nor dislike

—1983