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### Column Wiskundigen in den vreemde

# The land of Yoknapathapa

**Gerard Buskes got his Ph.D. with Arnoud van Rooij in Nijmegen in 1983. After his graduation, he spent a few years as a researcher in Adelaide, Australia. Following that, he went to the United States where he ended up as a full professor at the University of Mississippi. His research interests include functional analysis and operator theory. He actively strives to increase minority and female participation in graduate mathematics.**

On a steaming hot day in August 1985 I arrived on the campus of the University of Mississippi. After my Ph.D. at the Radboud University (then called de Katholieke Universiteit van Nijmegen) I had lived in Adelaide, Australia, working at Flinders University of South Australia, supported by a ZWO (now called NWO) grant. The owners of the oldest restaurant in the South, Smitty's, just off the quaint southern square, instantly looked for the Guest Book when I walked in for breakfast the next morning. It was clear that I came from 'den vreemde'. More than twenty-two years later, a circle is now closed with the request of the editors of *Nieuw Archief* to write about being a mathematician 'in den vreemde'.

#### **America and The American dream**

At first I felt a strong desire, maybe it was homesickness, to write this note in Dutch. But then I recalled that the request did not specify the language. In the end, I hope the reader will agree that the content forced my hand. I had to write in

American English.

From a Dutch perspective the American higher education system may seem dominated and exemplified by prestigious institutions like Berkeley, Harvard, and Yale. The reality of American education is rather harder to describe though. When children go to primary school, their parents are faced with choices that all are as un-Dutch as they are American. Yes, public education is free and every morning a massive bussing system offers the opportunity to deliver every school-aged kid to a public school. Here is the catch. The choice of public school is determined by the geographic location of the house of the parents. The bewildering quality differences in the primary and secondary schools then is a consequence of a system that largely sustains itself via the local property taxes of its citizens (and to a lesser and endlessly debated degree via spending to public schools by state and federal government, in addition to private fund-raising for both public and private schools). Consequently, and very generally speaking, where the wealthy and affluent congregate, the schools are well equipped, whereas an inner city school in say, Washington DC, may fare far less well. In addition, there are strong religious and social beliefs that continue to sustain a variety of private schools, parochial schools, academies, boarding schools, Montessori schools, and home schools. And before I continue, I have to point out that I am simplifying this very complicated system. Catchy programs as 'No Child Left Behind' are national attempts to unify some of that diversity, but its beneficial effects seem unproven

for now. What truly is remarkable in the light of the diversity of primary and secondary education is the observation that in the United States an unremarkable start in life seems to make true talent gravitate from humble beginnings to the very best places of higher education. And that is all part of the American dream. I add that my wife teaches at a public high school and my two children are at the beginning of their journey through (public) schools. The primary and secondary education system is both full of contradictions and brimming with tremendous potential.

### The University of Mississippi

Moving to post-secondary education, all of the bewilderment, contradictions, and potential only get magnified. Contrary to the University of Delft and the University of Nijmegen, the University of Arizona and the University of Mississippi are not only separated by a large swath of land but also are governed by very different State systems. Similarly, the socioeconomic, geographic, and historical background of e.g. the University of Mississippi make a comparison with any Dutch university impossible. An entering freshman will take a set of core courses, including mathematics, science, a language, English, and history. The choosing of a major like mathematics determines only about one third of the total number of credit hours before graduating with a bachelor degree. Beyond that, there is graduate school where specialization, masters degrees and Ph.D. degrees begin to draw a semblance to Dutch universities. The University of Mississippi is a state funded university. The State of Mississippi is the poorest state in the United States of America. In addition, the State of Mississippi has two more comprehensive state funded universities, four private universities, a handful of smaller universities, as well as community colleges, trade schools, and other state funded job training facilities.

### History

The University of Mississippi is relatively old. Relatively old, since the meaning of 'old' is in sharp contrast with the Dutch setting too. It was founded in 1848. The competition of where to place the new university was won by a town that had named itself Oxford with the purpose of winning. Oxford, Mississippi is the mythical land of Yoknapathapa as described by William Faulkner in many of his books. Its location, away from entertainment opportunities (almost seventy miles away from Memphis, Tennessee and more than three hundred miles away from the Gulf Coast), supposedly was part of its 'attraction'. At its start it ordered a lens that would have resulted in the largest telescope in the world at that time. That ambition was soon overshadowed by the Civil War, which cast a very long shadow. Now, almost a decade after its sesquicentennial, the University has gone through a transformation that is trying to advertise itself as the Harvard of the South. Most certainly, it transformed itself from a University in 1985 with barely 7,000 students in a sleepy little town of 15,000 to a vibrant University with 15,000

students in a town where every nook and cranny is being filled with condominiums, town houses, sushi bars and the like. In other even more noticeable ways, the university has transformed itself. Its Department of Mathematics made national headlines when last year four African-American Ph.D. degrees were awarded in mathematics during one graduation, against the background of about twelve such Ph.D. degrees in all of the United States on average per year for the last ten years. How that event is of such paramount importance for the University of Mississippi is hard to explain without a more detailed analysis and understanding of its history, which involves a long period of racial segregation. Reading *Light in August* or *Go down, Moses* by William Faulkner certainly will help understand that history. We also refer to a note (G. Buskes, 'Mississippi Mathematics Renaissance') in the *Notices of the American Mathematical Society* (Volume 54, no. 1) earlier this year.

### Education, research and service

At balance, the University of Mississippi necessarily is very different from any Dutch university. Not surprisingly though, the tasks of a University Professor are similar to those of a professor in the Netherlands. There is teaching, research, and service, in that order of importance at the University of Mississippi. What is incongruent in university teaching compared with the Netherlands, can in part be explained by the diversity of socioeconomic backgrounds of the students as well as the diversity in level of secondary education resulting from the factors described above. Also different in the American University system is a moving through the professorial ranks, from assistant via associate to full professor. In my case, I was promoted to associate professor in 1993 and to full professor in 2000. In the mean time, I had spend a wonderful year in the mathematics department at Utrecht in 1987. I have had four Ph.D. students here, spent an unmemorable year as Department Chair, have enjoyed research funding from the National Science Foundation, the NATO, the U.S. Department of Education and the Office of Naval Research, and have been provided every opportunity for professional development that I asked for. I add to the latter sentence, that the search for research funding by all university professors in the United States of America is in part driven by economics, caused by a U.S. university tradition that offers contracts to its Professors for nine months of the year.

In conclusion, the opportunities and the challenges of where to make a difference in one's career may well be more complex and diverse than they are at Dutch universities. At the same time, the rewards contain the same set of contradictions and almost infinite brilliant potential, that appears to underlie not just the university system but American Society overall. And in some ways, as much as it often makes me realize that I am 'in den vreemde', I also fully realize that I would not want it any other way.

