Remarks at the investiture of Murugesu Sivapalan
as Chester and Helen Siess Endowed Professor

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I’ve been asked say some words on the topic of “Why Professor Sivapalan?”

I am a former PhD student of Siva, as he is known to his friends. It might seem unconventional for Siva to ask someone so young and untenured to give this kind of address. Shouldn’t a more senior colleague be appropriate? Someone whose own long history of awards and recognition would impress upon you all Siva’s worthiness for the position of endowed chair. But to those of us who know him, this choice is quite typical of Siva.

Now, senior colleagues have given this kind of introduction in the past: Siva has been well-recognized by his peers for his intellectual contributions, and for his leadership. He has received the “grand slam” of hydrology awards: the Dalton Medal from the European Geosciences Union, the Horton Medal from the American Geophysical Union, and the International Hydrology Prize from UNESCO. He is one of only three people to have won all three awards. Perhaps in choosing a former student this time, he just thought he’d shake things up a little. That would be quite typical.

To understand why Siva is so highly regarded, you need to understand a little history. Hydrology has, in large part, focused on solving important practical problems, like knowing how much drinking water we can reliably draw from a dam, or a well.

But for some, hydrologic science is something more.

The transformation of falling rain into a surging river is, for them, the result of a vast network of interactions in the landscape: rock and soil, hills and valleys, heat and light, plants and people. This network is renewed and revised with each storm, and with each drought. It creates the hydrologic system, and is sustained by it. Hydrologic scientists have sought to understand this system deeply.

In the 1960s and 70s this work took off, and detailed field studies revealed a tantalizing combination of order and randomness. The flow through the landscape was too variable for simple idealizations to do it justice, but it shimmered with patterns that hinted: deeper insights are possible.
But hydrologic science lacked its own body of theory, its own set of abstractions that could make sense of the hydrologic system on its own terms, and might lay bare an inner structure and organization.

At the start of the 1980s, Siva arrived in the US to begin graduate studies at Princeton. Over the next 35 years, along with the students and colleagues he inspired and led, Siva has helped lay the foundation for such a hydrologic theory.

Siva’s career and contributions can be broadly divided into three parts.

During his PhD, and in the decade after with his students at the University of Western Australia, Siva showed how spatial scale is a master control on hydrologic systems, and proposed ways to unify our understanding of this control. His work cut through conceptual confusions. A landmark review paper written with a young colleague, Guenter Bloschl, now president of the European Geosciences Union, laid out the issue with unsurpassed clarity and insight, and has been cited over 500 times.

Characteristically, Siva used simple models to generate deep insights, revealing how shifts in the hydrologic dynamics of watersheds of different scales arises from shifts in the balance between competing forces in that vast network of interactions. Few can pull off this kind of high-wire balance of simple-mindedness and clear thinking, but Siva’s work persuaded with an elegance that was above reproach.

Siva cemented his role as an international leader in the second part of his career, as the driving force behind the Predictions in Ungauged Basins, or “PUB”, initiative - a 10-year global effort to improve hydrologic predictions in places that lack stream gauges. Siva has never forgotten his origins in the large part of the world that lacks the hydrologic data typically available in the US and Europe to solve practical hydrologic problems. He took on the task of writing the draft science plan and getting others to contribute to it. During this time Siva focused his energy much more on including other people than on his own research, in the expectation that the science would follow naturally from getting the right people working in the right direction. Travelling tirelessly from his home in the most isolated large city in the world, he focused the passion of a huge global community of like-minded scientists towards a common goal of great practical significance. The wealth of new ideas and energy that was generated during the PUB decade are a testament to the wisdom of his approach.

Over time, the importance of understanding hydrologic systems deeply has become more and more clear. Many of the traditional methods of applied hydrology rely on an assumption that the future will look much like the past. In the face of accelerating climate and landscape change, this assumption is no longer tenable. Now, in this third part of his career, Siva has made the issue of predictions under change his central focus. In characteristic style he is today seeking fundamental insights into the way human society and hydrologic systems
interact and change each other over time, and his enthusiasm is drawing in like-minded scientists under a new umbrella of “sociohydrology”.

Before I end this introduction let me say some more personal words about Siva. In the last few weeks I contacted other former students who worked with Siva at all stages of his career to help me write these remarks. Three of Siva’s habits came up in many of the responses: One is his tendency at seminars to ask beguilingly simple questions that nevertheless stump the speaker. Often the “Siva question”, as it is sometimes referred to, boils down to a genuinely curious “Why is this important?”

The second is the image he invokes when urging a student to look up from the nitty-gritty details, and to keep their sights on what is really creative, important, and groundbreaking: “You’ve got to cut across the jungle!” I think every one of his graduate students has heard him say this dozens of times.

The third is the way his exceptional mentoring of graduate students is grounded, in part, by his humility. Siva clearly recalls what it was like to be leaving your home and going far away for graduate school, or to be at your first big international conference as a nervous foreign student that no one cares to talk to, or to be starting out as a new junior faculty member, wanting to prove yourself and afraid of failure.

Siva is today one of the most well-known and recognizable figures in the hydrologic community, but the frequent advice he gives to young scientists still rings true: that you shouldn’t strive for awards and recognition and to be the biggest guy in the room – just find an important question and to try to answer it – and then all the other stuff will come.

In answer then to the question of “Why Siva?” I would say: because that is exactly what he has done.

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Acceptance Speech by Murugesu Sivapalan as Chester and Helen Siess Endowed Professor

Vice-Provost Benmamoun, Dean Cangellaris, Head of Department Benito Marinas, members of the Siess and Hall Families, Distinguished Colleagues, Ladies and Gentlemen

Thank you all for being here, and thank you Ciaran for the nice introduction. Ciaran is the link back to my time in Australia and represents several students who did the hard work which has brought me this recognition. He is one of the best products of this university – having won the Ross Martin Award of the College of Engineering for the best PhD student. He is also co-author with me on 25 papers – a burden he has been trying to live down by branching out and putting some distance between us – I am grateful that in spite of this he agreed to give my citation today.

This award is very special to me. This is the first time I am receiving an award that had money come with it. Every time I won an award I would go home and report to my wife, and always the first question would be, how much money are you getting? When I say that there is “no money, just prestige”, she would say “what is the prestige in it if there is no money?” But this one was different: no sooner than I told her that I have been awarded the Siess Chair, money was actually in our bank account – it was her kind of award. This explains why there are four generations of my family here, from my mother-in-law to my brother and my wife’s brother (and their families, including our niece Sarmini and nephew Thivyan), all the way to our grandson Vinay– clearly my wife thinks this is special and deserves to be celebrated. So, I am grateful to the late Professor Chester Siess, Helen Siess and the Siess family for establishing this endowment. Just receiving it makes me special, but giving it must make them super special.

I am proud to be a member of the #1 ranked CEE department – although I have benefited enormously by being here, I was always concerned that I have not contributed much to the success of the department. So I am truly grateful to my colleagues in the Civil and Environmental Engineering Department who, in spite of this, have considered me to be worthy of this recognition. I also want to acknowledge the support of the Department of Geography, and the freedom I have had to chart my own course in the university.

For me today’s recognition is the culmination of an incredible journey: incredible not because (as I often boast) that I have lived at least 2 years in 5 continents. That may sound exciting and exotic, but it was not like I had a choice in it. What is incredible is that I have made it this far from where I started. I grew up poor in a small village in northern Sri Lanka. My brother Sivam is here from Toronto, and I also invited our friend Dr Skandarajah from Indianapolis, who was a classmate of my brother and brother of my classmate, who can relate to this. We used to live in a house that had no electricity, and no running water. We had an open well, but the water was brackish – so sometimes it was my job to go to neighboring houses to fetch drinking quality water. My uncle bought me a bicycle to ride the 4 miles to high school, because my parents couldn’t afford it. I didn’t even own a pair of shoes until I left for College. A painful memory I have is of the 1969 landing on the moon. Because we did not have a radio at home, I went into town and stood outside a corner tea shop in the hot sun for over 8 hours so I could listen to the live commentary on their radio.
In spite of this my parents have a lot to do with my success. I sometimes think that I am like my father inside the home (dutiful, enlightened, but laid back), and like my mother outside the home (strong willed, from whom I inherited my fighting spirit). My mother may not have got past eighth grade, but she was intelligent and street-wise. She had phenomenal self-belief and staying power that pulled our family out of the big hole we were in. In spite of enormous difficulties she gave me cover: she begged and borrowed – she would even get into fights that made me cringe so I (and our brothers and sisters) could pursue our dreams – my brother here is living witness. She made sure he went all the way to a PhD in Econometrics in Canada in spite of his disability. While I was in high school, while I studied late at night with the only kerosene lantern we had – my mother would stay up outside until I went to sleep. And she would wake me up at 4.00 o’clock in the morning to study while she went about her chores.

I want to remember my mother with an anecdote. This was in 1969: in Sri Lanka to enter the university one has to sit a country-wide competitive exam. To do Engineering one had to specialize in 4 subjects: Pure Mathematics, Applied Mathematics, Physics and Chemistry. I was the first one in my (even extended) family to go to high school, let alone take this exam. In April 1969 the results were announced at school. I have two classmates here from Chicago who took the exam with me: both Sathiaseelan and Padmini are electrical engineers, and he is a professor at Northwestern Medical School. My grades were 1 A and 3 B. You might think this is a rather ordinary result – actually it transpired later that not only was it the best in my school, it was the 8th best in the country out of some 60,000 students who took the exam that year. I rushed home to announce the result: my mother was chatting to a bunch of her friends. I excitedly told her that I got 1 A and 3 B. My mother paused a little, looked at her friends, then turned to me and asked, Son, is that a pass or a fail? To this day I do not know if she really did not understand what 1 A and 3 B meant or if she was putting on an act to let her friends know that I had passed. I suspect that she knew that her friends would not understand fancy letters like A and B, and only pass/fail would get the message across (and get repeated around town) – that is the kind of person she was. Anyway, I went to university and each year we would have our annual examinations, and when the results were announced, I would send a telegram home with a brief message: Exam Pass First Class (Exam Pass was for my mother, First Class was for my father).

From Sri Lanka I went to the Asian Institute of Technology (AIT), Thailand on a scholarship for my Master’s degree: my grades were not good enough to go to graduate school in the UK (USA was unknown to us then). After AIT, I tried but failed to land a PhD place, and so I took a consulting engineering job in Nigeria that came my way (actually) by accident. I had a wonderful time there and met scores of Sri Lankan friends. Jeevan Hoole is one of them – he and his wife Dushyanthi are Professors at Michigan State, and agreed to grace this event. I want to recognize someone who I met in Nigeria as a kid, just 5 years then: 35 years later he arrived on this campus as a Professor of Electrical Engineering. I am talking about Professor Kirubaharan, who is in the audience: he used to call me “uncle” then he still calls me “uncle” now. I went to Nigeria, putting off my PhD dreams because my family back home needed my support. Four years later, in 1981, I tried again. This time to maximize my chances I applied to 15 universities: incredibly Princeton was the only one that
admitted me. To this day I am not sure how I managed it – my PhD advisor would never let me know – I guess I was just very lucky. After I completed my PhD, I tried for faculty positions in the USA for 2 years. I did not land even a single interview. I was desperate and started to look elsewhere for jobs: because of the civil war in Sri Lanka and being a Tamil going back home was not an option. And then a miracle happened.

I was once interviewed for a research scientist position at CSIRO Australia – I knew later I did not get that job either. One night in 1988 I received a surprise phone call from a strange guy by the name of Jorg Imberger from the University of Western Australia. He said to me, *I heard that you did not get the job at CSIRO, would you like to come and work for us?* I was initially more annoyed than uninterested: I did not know him or Western Australia (it was the furthest place in my imagination), besides it was a 3-year soft money lecturer position. I was also annoyed I had to hear from him about the CSIRO job. But he persisted, I was desperate, so I agreed to go if he could arrange permanent residency for us in Australia. He was true to his word, I took the job and we left for Australia, expecting the worst and hoping for the best. To cut the long story short that was a turning point in my life – and as they say the rest is history.

As you can see, there was pain in every move I made, but I also had some lucky breaks. The luckiest break of all was marrying Banumathy, my wife of 34 years. There is an interesting story behind that too. While I was in Nigeria and getting ready for Princeton, I had agreed to an arranged marriage and my parents were seriously searching for a girl for me. But it was going slow, and I was getting impatient. So I wrote to my father, and complained: *how can this be so difficult, why not place a matrimonial advertisement in the newspaper?* My father was unimpressed and wrote me a long letter. He said that one advertises only when one has a bad product to sell – reminded me that I am not a bad product. He said that marriage is like a thousand year crop and a lot of experience and wisdom must go into arranging it. He told me, in his words (in English): *you don’t have the experience to even have an opinion on this matter.*

Soon enough the marriage was arranged, and I met my wife for the first time on the day of our wedding (I was 28, she was 18). Two weeks later we were on the plane to New York. Little by little, even as I got immersed in my work, my wife took charge of the family. Nowadays she would complain to anybody who is willing to listen, that she has been a single parent, not only to our two sons, but increasingly to me as well. I want to also acknowledge our sons Kavin and Mayuran, and our daughter-in-law Lizanne, who are here to celebrate with us, along with our lovely grandson, Vinay, our pride and joy. For them I am not an engineer or a professor, just a dad or grand-dad: in fact, they are surprised that someone who cannot do the simple things at home can be an engineer, but they love me regardless. We are a very close-knit family and my wife is the center of our universe. There is a saying in Tamil: “You need a wall to paint a masterpiece”. My wife has been my wall, the backdrop to my success. No amount of thanks will do justice to the sacrifices she has made and the care with which she keeps us together. It is to her that I dedicate this award and every good thing that has happened to me.