

Gustaf Olsson and me: mentorship at its best

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This tribute is really about Gustaf and me. Others will have written eloquent appreciations of the scientific and practical merits of Gustaf's professional career, but I want to use this contribution to exemplify how Gustaf profoundly impacted my life and in this way illustrate how he may have impacted the lives of so many others that don't get a place in this Festschrift (thanks, Pernille, for the initiative by the way: it is just a wonderful way for some of us, in the name of many, to try to express our affection to Gustaf).

To start with a boutade: Gustaf is the reason Annick and I embarked on learning a fifth language, Swedish (next to the three official Belgian languages and of course (I guess), English). Why? Because we wanted to really take part of his culture, really feel what made him such a wonderful person. In the meantime, Annick and I have lived over a year in Sweden and if it weren't for the really short days in winter, we'd probably be retiring there.

Let's go back to where Gustaf's mentoring of me as a person and a scientist all started. In fact, it is thanks to one of the best research programs the European Union ever funded: the COST program. At no point has research gotten more bang for the buck. COST was meant to create networks of researchers across Europe around certain strategic research areas. Wastewater modelling was one of these areas and my other main mentor, Willy Verstraete – what an impact he had! But that is worthy of another tribute... – pushed me to become the second representative of Belgium, searching for the equilibrium between the Flemish and Walloon representation. Together with Denis Dochain, of Université Catholique de Louvain, who has also had a significant contribution to my early career, we got in touch with the European wastewater modellers. Well, Gustaf Olsson was one of them and he literally took me under his wings. One cannot imagine how this COST program, with relatively little means, has catapulted a whole group of young European researchers to the top. So many of the young PhD students or postdocs I got to know then, are now leaders in the field. It would just be nice to line them up once and see how efficient research funding can actually work.

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But let's go back to Gustaf! My research then was about respirometry (they still call me 'respiroPeter' now and then) and I was already collaborating with my Dutch brother in arms, HenRi Spanjers, who Gustaf had started mentoring as well. In 1991, only one year into my PhD, Willy Verstraete (again!) sent me to Sweden to work with HenRi and Gustaf, because he knew this would help me move forward, give me the independent view, get new insights. It sure did! By 1992, my relationship with HenRi and Gustaf was such that I dared to ask him to chair a workshop that Willy Verstraete (the visionary he was!) had suggested me to organize in the framework of the local Forum for Applied Biotechnology (FAB). Willy just created an opportunity for me, and I grasped it fully: he must have felt I would love organizing conferences (and I did)! Having Gustaf then as a chairman of the workshop made that it got traction, it got the structure it needed, it got top-notch discussions going and gave me the confidence to start a series of FAB Workshops on Monitoring, Modelling and Control of Wastewater Treatment Plants. Talking about giving a young person the chance to shine! Gustaf not only gave me confidence, but was a true mentor on how one should make such workshops truly work. Together with the Kollekolle modelling seminars in which he was involved as well, it has eventually lead to a number of, I think, successful workshops and conferences on modelling and control, where water professionals around the world could come together to learn about each other's experience and expertise, and ultimately to make significant progress, together. Gustaf, consider this part of your legacy!

The picture I have added in this tribute is a truly important one to me. It is taken in Bruges, September 1992, almost 30 years ago, and immortalizes three truly important people in my personal and professional career. From right to left, Denis Dochain, young me, Gustaf Olsson and HenRi Spanjers.



Next to our shared eternal optimism, enthusiasm and the joy of a good laugh, something else that people in the profession may not know, made us resonate: Gustaf and I have a similar (schizophrenic) interest in two completely different domains: nuclear engineering and biological processes. When I stood in front of one of the most important choices in a person's life: what studies will you embark upon, I hesitated a lot to go into nuclear engineering myself. However, in secondary school my math results were not very strong (to say the least), so, given the very math-oriented entry exam for the nuclear engineering studies, I bifurcated to the very promising new area of biotechnology, and this brought me eventually into microbial ecology and technology (and its modelling). So, at all times, Gustaf and I enjoyed talking about the interplay between quantitative methods for nuclear power systems and biological wastewater treatment. But the huge differences between these two fields inspired us: Nuclear power systems are (luckily) pretty well understood whereas biological wastewater systems are much less. For nuclear power systems, control is key and part of life, while it was (and still is) not for wastewater systems. But inter-disciplinary transfer of knowledge, experiences and technologies is surely possible and full of potential. It gave us a vibe to ride on.

By 1993, my first IWA international specialized conference on instrumentation, control and automation, which brought me (and Annick) to the 'promised land', Canada, Gustaf had become a true mentor of my research and he, I think, started to look beyond my PhD: he pushed HenRi and me, to join Peter Dold, another iconic member of the wastewater modelling community, to embark on an IWA Task Group on Respirometry for Control of the Activated Sludge Process. He went in fully himself as he wanted to support us. Little did I know that this would keep part of me busy for the next 20 years (until we published the third in a series of three Scientific and Technical Reports: the Benchmarking STR). It was Gustaf, together with the visionary ideas of Ulf Jeppsson and Bengt Carlsson, that got us going on a journey of finding methods to objectively evaluate control ideas (first based on respirometry, but later way beyond that). And Gustaf has been by our side all the time, helping us like a father that helps his child to learn how to ride a bicycle, giving it the confidence it will make it till the end of the street, but being around in case it would fall and hurt its knees or elbows.

As I grew in my career, Gustaf was around on a regular basis, thanks to the COST money that allowed us to see each other in workshops on relevant topics, discussing next challenges and increasingly helping me with research management: how to organize research, get research funding and supervise graduate students. Indeed, by 1997 I had become professor myself, but there is no dedicated school for that and Gustaf (and Willy) were there to mentor me through this daunting learning phase. I have been able to pick up so many good ideas and ways of doing from them and I hope that my collaborators realize that they have to thank Gustaf for the way I have been working with them. Talking about a legacy again...

I want to give two more examples of what Gustaf contributed to in terms of training: Together with Helmut Kroiss, another one of those legends of the water

profession, he developed the journal paper writing course in the early 2010s. The first of these was in Kuala Lumpur, I think, and one of my PhD students had the benefit of taking part in it. She came back completely transformed, had had the theoretical training that Helmut and Gustaf had given, but more importantly, she had her draft paper thoroughly worked through and transformed, and rather than being derailed by the considerable changes they made to her draft paper, she got so much confidence from the way that Gustaf had been working with her, that she was just ready to write scientific papers.

The second example of the influence Gustaf has had on training young water professionals originates from a summer course on wastewater system modelling that Giorgio Mannina organized for a few years in Palermo, Italy in the mid-2010s, with Gustaf, George Ekama and Hallvard Ødegaard. While the students learned a lot of technicalities about each of the disciplines covered by these mastodons of the field, the added value the students gained in terms of personal development has been such a source of inspiration, probably for the rest of my life. Gustaf has the gift to talk to a student in a way that makes them come out of such personal meeting, even if it is only a few minutes long, in an energized way, plenty of confidence, with new ideas and ready to tackle the next challenge. During one of his visits to Quebec, I asked him to spend a day at university with my students spending time with each of them, one-by-one. What an energy boost and injection of new ideas this has been for the team. It were truly inspiring encounters that so many of us have been able to enjoy as well, because Gustaf always makes time (where does he find it?) to inspire young water professionals (and not so young ones too – I still get the thrills when I'm discussing with him!).

To finish, I think it is essential to look beyond the impact he has had on me (and my collaborators) and recognize that Gustaf is a true giant in the whole water profession field. He not only made so many people succeed in the field, each contributing in their own way, but each of them basically also amplifies the seeds of ideas he plants in them. He is of course a key contributor to the fields of modelling and control of wastewater treatment, but he has in the later stages of his career gone way beyond these rather technical disciplines: think of his contributions to the water–energy nexus, and sustainable development overall and I heard he is writing yet another book. What will this one be about. Keep surprising us with your guidance, Gustaf!