

# Origin of the World Conferences on Sampling and Blending (WCSB)

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The year 2021 is fast approaching when the World Conference of Sampling and Blending will see its anniversary 10<sup>th</sup> edition. Recently, some of the younger members of our community have been asking: “how did the WCSB series originate in the first place?” When pondering this, even those intimately involved had to admit to a substantial degree of memory uncertainty, and decided to set the record straight before everything has receded too much into a fog. The authors of this article have, with great difficulty, dug into their memories (not entirely successful) and their PC backlogs (much more helpful and successful). Recollections were coordinated, e-mails and other documentary material, some from more than 20 years ago, were exhumed (more or less easily from severely outdated physical hardware and software – the reader may, or may not, have a realistic idea of what 20 years represents in the form of how many generations of PC hardware and software have passed), and a concerted co-authorship action spanning Australia, Canada and Denmark was undertaken. It turned out that this visit down memory lane was in fact a

lot of fun, besides a truly “last minute” rescue operation. We are delighted to present this historical nugget to the readers of *TOS Forum*.

## How it all began I

“In a small city, in a small country, in a time far, far away....” The event was in late 1998, 20 December to be precise. The historical catalyst of what was to become the first WCSB (and much more), was a PhD defence for a student of Professor Pentti Minkkinen of the Institute of Chemistry, University of Lappeenranta, Finland. PhD student Riitta Heikka was to defend her thesis: “Sampling and Calibration in Process Analytical Chemistry”, for which Minkkinen had decided to call upon opponents from two “very disparate disciplines”, The Theory of Sampling (TOS) and Chemometrics. In reality, at this time only Professor Pentti Minkkinen had worked seriously to bind these disciplines closer together, and had in fact tried to get one of the present authors over a period of several years to join him in this endeavour, but “with only *sluggish results*” (Minkkinen’s own words). This historical backdrop is well described in Minkkinen’s

contribution to issue 8 of *TOS Forum*, “Pierre Gy—in memoriam”.<sup>1</sup>

As a consequence, he decided on one last try and called upon Pierre Gy *lui meme* (readers need not guess which discipline this first opponent was supposed to deal with) and KHE (at that time representing ~20 years of work within the discipline of *chemometrics*). And so it came to be that a French–Danish professional, and soon personal, friendship started, a development to last until 2015 when Pierre Gy passed away.

The immediate consequences of this meeting in Lappeenranta was that the chemometrics professor on the spot decided to make a 90° clean break with his then scientific career path, and start to delve much more into TOS and its applications to many technological and industrial sectors “because this was much more challenging than simply continuing to coast along a chemometric trajectory”. This could not have come at a more appropriate time, as in August 2001 KHE was appointed Professor (in “Data Analysis and Process Technology”) at Aalborg University, Esbjerg, Denmark. Thus, in the very early 2000s there had just



**Figure 1.** 20 December 1998, Lappeenranta University of Technology (LUT). Left: PhD defence for Riitta Heikka in the company of a proud supervisor Prof. Pentti Minkkinen and two international opponents, Dr Pierre Gy and Professor Kim H. Esbensen, respectively. Right: As far as chemometrics and TOS go, after the academic duties were respectfully discharged (to everybody’s satisfaction, not least for Mrs Heikka), this was love at first sight.



Figure 2. Rydges Hotel on Hay Street, Perth, Australia.

started a small, but steadily growing, activity on the interface between sampling (TOS), chemometrics and process technology—in another, equally small city, in another equally small country, also far, far away...

### How it all really began II

The year was 2000, February in Perth, Australia and the venue is the terrace of the erstwhile Rydges Hotel on Hay Street (Figure 2). That autumn afternoon, two fellows working in mining and geostatistics discussed “world matters” over a drink, *maybe* more... Their beers were pleasantly cool with which to take in that beautiful weather, business was booming and TOS was more appreciated than ever before in the mining industry. But even so, though life was good on Hay Street, there was this terribly frustrating issue, it was soon agreed, that in other circles scientific recognition of Pierre Gy’s Theory of Sampling had been lagging for (far) too long...

As hardline followers of Pierre Gy, these gentlemen felt they **had** pulled all the strings they could think of, calling for public attention outside their own communities to Gy’s magnificent scientific contribution to the industry at large. They felt that they had been trying very hard with professional institutions and academic organisations to obtain a mere gesture of recognition, perhaps a medal or an honorary degree of some kind for Gy, here, there, in Canada, in the USA, elsewhere—but in vain. Very, very frustrating!

After a few more beers, they then remembered how George Matheron, the father of Geostatistics, had indeed been honoured

in various ways, and how he, and subsequently many of his students, were regular key persons at many a Geostatistical Conference, and how such ongoing events had, in effect, built a perpetual memorial to him.

It is true that the great Pierre Gy never indulged much into publicity or proselytism and had made only modest efforts to teach or convince others. Pierre felt that his scientific work should be judged on its own merit; he did not have much regard for “pushy self-marketing” and the like (quite a few academics a.o. in this world could learn a thing, or twenty, from Pierre Gy here). To be honest, quite conscious of the paramount importance of his work, this proficient mountain climber had single handedly, and painstakingly, built a full theory from scratch, complete with rigorous mathematical-statistical demonstrations and practical implementation rules, and he had done all this alone, with no exterior help and no other motivation than his own purely scientific quest.

However, the world *must* get to know more about this, our frustrated beer-drinking and reflecting gentlemen thought. It appeared clear that such a powerful theory, which had changed the face of the mining and related industries, did not need to be **proven** any longer, the successes were far too many and spectacular: but why then was his name still awaiting recognition outside this industrial sector? More efforts had to be marshalled!—but how? (more beers were ordered).

Then, the experiences from several geostatistical conferences finally did strike a chord that day in Perth, and John and

Dominique saw that **this** was indeed a way they had missed all that trying time!

### What then transpired?

As a consequence of the pre-history backdrop related in the introduction above, Pierre had at some intervening time, actually just a few weeks before this Australian encounter (November 2000), put Dominique and Kim in mutual e-mail contact, and they had agreed that the only opportunity to meet for two such busy entities would be *between* two of Dominique’s incessant flights to and from all over the world. So, Copenhagen airport was chosen, since it at that time often served as a hub for many further flights for Dom, and it was (finally some luck) not a problem for Kim, who was based only 300km away. So, by March 2001 the idea of a sampling conference (*somehow, somewhere*) and also a Pierre Gy medal (*if the one, then also the other ...*) had been briefly introduced between the three present authors.

After finding and introducing one-another at Kastrup airport, beer was again on the menu (proper Danish beer of course) and soon the case about their common friend and Sampling Grand Master was front and centre of the agenda. The big thing of the day was that Kim, a relatively newly minted full university professor, had decided that he was now in possession of the logistics, the resources, the will, the energy and the motivation to get a first international sampling conference organised in the Kingdom of Denmark. The day was 6 April 2001.

### Fast forward: WCSB1

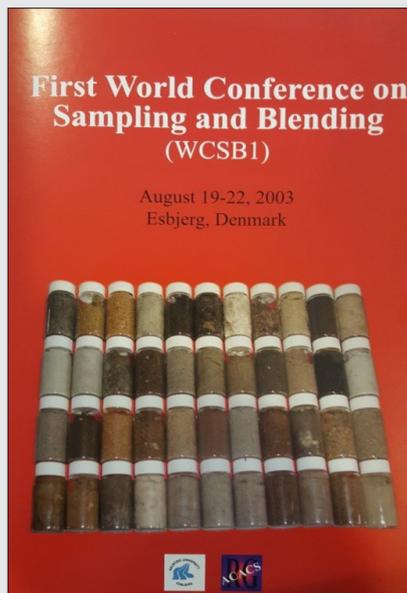
Fast forward to 19 August 2003, under the auspices of Alborg University, campus Esbjerg. A crowd is filling the conference room at Hotel Britannia, the venue selected for WCSB1. Pierre is sitting in the front row, and the atmosphere is one of great excitement. Indeed, even though maybe not everyone present realised it, history was in the making, starting a journey for decades to come... Finally, it was time to bestow the appropriate honours on Pierre.

Figures 4–6 are a few mementos from the first three years of the millennium.

Indeed, Esbensen had had to use rather strong words fighting off a group of fellow-professors (in the German vernacular such are known as “BesserWissers”), who accused him of “abusing his students”. Well what fools were they—history had a very



**Figure 3.** Nobody was more happy along with Pierre Gy as the three originators (left-to-right: John, Dominique, Kim). The origins story had finally come to a successful closure, and organised scientific encounters and proper interaction could begin—which became the World Conference on Sampling and Blending (WCSB) forum.



**Figure 4.** First Call (ever) to a World Conference on Sampling and Blending.



**Figure 5.** Praise where praise is due: those who realised the dream *in practice*. Most everything has a humble origin, so also WCSB. The WCSB1 organisational committee had absolutely no idea what would be the follow-through of this initiative. In fact, besides the conference chairman and secretary, there were no other professionals involved, but, indeed as it turned out, so much for the better, in the form of an untiring, highly energised crew of Prof. Esbensen MSc and PhD students (left-to-right) Lotte, Anette, Lars P., Casper, Ellen Karlsen (Conference Secretary) KHE (Conference Chairman), Julie and Hans-Henrik.

different judgement, witness the publication of the Proceedings of the First World Conference on Sampling and Blending.

Hereafter the institution of WCSB developed pretty much by itself through a series of intrepid colleagues who were willing to take on the hard work of organising international conferences. The crucial next step came in the form of swift midwife action by Ralph Holmes who “on the spot” offered to organise the 2<sup>nd</sup> WCSB, venue to be located in Brisbane. After that, in a wonderfully uncoordinated fashion, a next chairman always simply showed up (at time

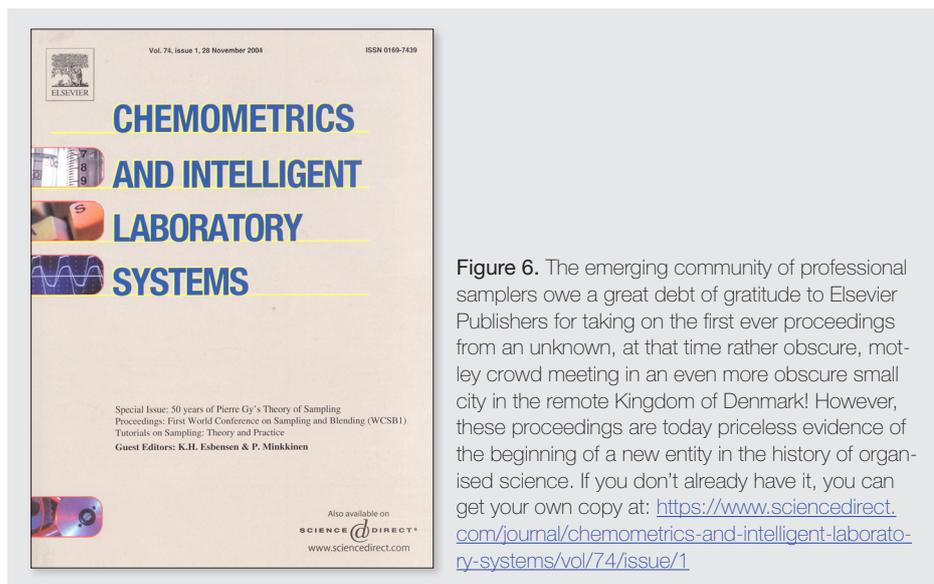
literally out of blue, thin air) intent on furthering this development. It must be kept in mind that it was not until 2017 that the International Pierre Gy Sampling Association (IPGSA) was inaugurated, at WCSB8 (Perth). Until then, some chairmen came close to “mortgaging their houses” to get a guarantee for financial backing and sometimes only backed by rather *ad hoc* organisational and scientific committees. Our community can indeed count itself lucky that chairmen and committee members all rose to the occasion with flying colours more and more now joining forces with

relevant scientific, organisational or commercial entities AusIMM, SAIMM, GECA-MIN). Indeed, most conferences were able to pass forward a small, but important economic surplus to its successors. The subsequent historical development of the WCSB series is described in Reference 1.

...and **that** is how it all came to be....

## References

1. “History of WCSB” [https://intsamp.org/wp-content/uploads/2019/03/History\\_of\\_WCSB\\_KHE\\_WCSB6\\_proceedings.pdf](https://intsamp.org/wp-content/uploads/2019/03/History_of_WCSB_KHE_WCSB6_proceedings.pdf)



**Figure 6.** The emerging community of professional samplers owe a great debt of gratitude to Elsevier Publishers for taking on the first ever proceedings from an unknown, at that time rather obscure, motley crowd meeting in an even more obscure small city in the remote Kingdom of Denmark! However, these proceedings are today priceless evidence of the beginning of a new entity in the history of organised science. If you don't already have it, you can get your own copy at: <https://www.sciencedirect.com/journal/chemometrics-and-intelligent-laboratory-systems/vol/74/issue/1>

2. International Pierre Gy Sampling Association (IPGSA) <https://intsamp.org/>
3. K.H. Esbensen, P. Minkkinen (Eds), "Special issue: 50 years of Pierre GY's Theory of Sampling & Proceedings of the First World Confer-

ence on Sampling and Blending (WCSB1)", *Chemometr. Intell. Lab. Syst.* **74(1)**, 1–236 (2004). <https://www.sciencedirect.com/journal/chemometrics-and-intelligent-laboratory-systems/vol/74/issue/1>

## Appendix: IPGSA archives

Please view this historical note as an *invitation* to submit whatever historical documentation is in your possession to the IPGSA homepages. We are in the enviable situation that we already have built up a complete historical record of how the organised work surrounding the Theory of Sampling came to be.<sup>1</sup> Now it is time to do the same regarding the WCSB *historical institution*. It is the intention to establish a historical archive, which can only succeed because of contributions from **you**. A vast volume of photographs exists a.o. from the entire WCSB series out there, but most of it resides in your personal archives only – and what's the wider effect of that? The IPGSA Council has appointed KHE as historical curator. *Any-and-all relevant entries* from 2000 on are of the greatest common interest.

Please submit material to: [khe.consult@gmail.com](mailto:khe.consult@gmail.com)

[Curatorial note: please include copious text descriptions of venues, persons-in-view, anecdotes etc. History need not at all be *dull* ...]