

Who built the SSD — corporate or EPA? (affiliations from the primary papers)

Question posed 2026-06-11: are the people behind the Species Sensitivity Distribution corporate or government? Answered here from the **title-page affiliations of the actual papers** now held in `papers/` (not from memory). Companion to [SSD_GENEALOGY.md](#) and [SSD_DE-MINIMIS_LINEAGE.md](#).

Short answer

The SSD's origins are government and academic — specifically the U.S. federal water agency that became the EPA, and the Dutch public-health/environment institutes. **Not corporate**. That is the opposite of Frawley's de minimis, which an industry trade campaign pushed onto a reluctant FDA. **But industry** moved in as the method matured into a regulatory tool — and the human-side relative of the SSD, the TTC, was corporate from the root.

The evidence (verbatim from the papers' title pages)

The origins — government / academic

Paper	Affiliation (as printed)	Type
Mount & Stephan 1967 (application factor)	"Fish Toxicology Activities, Federal Water Pollution Control Administration, U.S. Department of the Interior , Cincinnati" — the agency folded into the EPA in 1970	US gov't → EPA
Kooijman 1987 (statistical SSD)	" TNO ... Delft, The Netherlands"; funded by the " Ministry of Housing, Physical Planning and Environment "	Dutch public research / gov't
Slooff, Canton & Hermens 1983 (foundational data)	" National Institute for Water Supply "; " National Institute of Public Health, Bilthoven " (→ RIVM); "University of Utrecht"	Dutch gov't + academic
Van Straalen & Denneman 1989 (95% rule)	"Department of Ecology and Ecotoxicology, Free University [VU Amsterdam]"; to implement the " Soil Protection Act of 1986 ... Dutch Ministry of Housing, Physical Planning, and Environment"	academic + Dutch gov't
Wagner & Løkke 1991	"Technical University of Denmark"; " Ministry of the Environment, National Environmental Research Institute "	academic + Danish gov't
Aldenberg & Slob 1993 (HC5 CIs)	" National Institute of Public Health and Environmental Protection (RIVM) "	Dutch gov't

The foundation is unambiguous: a U.S. federal pollution agency (the direct ancestor of the EPA) and the Dutch RIVM / VU Amsterdam / Danish NERI. The statisticians who built the HC5 were government scientists.

Industry arrives as the method becomes regulation

Paper	Affiliation	Note
Aldenberg & Jaworska 2000 (HC5 uncertainty)	RIVM + Procter & Gamble (Eurocor, Belgium)	a foundational statistics paper now co-authored with a consumer-goods corporation
ECETOC WR28 (assessment factor of 2)	European Centre for Ecotoxicology and Toxicology of Chemicals — the chemical industry's research body	sets the leniency dial (AF = 2 vs 5)
Belanger et al. 2017 (SETAC "future needs" consensus)	Procter & Gamble (lead) · U.S. EPA · Durham Univ. · ECETOC · Unilever	the consensus on SSD's future is industry-plurality : two consumer-goods firms + the chemical-industry body, alongside one EPA lab and one university

So by the 2000s the people steering the *application* of SSDs include the EPA and academia **and** Procter & Gamble, Unilever, and ECETOC — the tripartite SETAC world, with industry the largest single bloc on the key consensus paper.

The critics are academic

Forbes & Forbes (1993, Danish NERI), Hickey & Craig (2012, Durham), Fox (2010/2021, Univ. Melbourne / Environmetrics Australia) — the people writing the *critiques* of SSD's statistics are universities and government research institutes, not industry.

The human-side relative (TTC) is corporate from the root

The cross-branch our genealogy ties to the SSD is, by affiliation, far more corporate: | Paper | Affiliation | Type | |---|---|---| | **Cramer, Ford & Hall 1978** (the decision tree / Cramer classes) | "**McCormick and Co., Inc.**" (the spice company) + "**Research Institute for Fragrance Materials, Inc.**" | **food / fragrance industry** | | **Munro et al. 1996** (the TTC) | "**CanTox Inc.**" (toxicology consultancy) + "**Research Institute for Fragrance Materials, Inc.**" | **industry consultancy + fragrance industry** | | **Kroes et al. 2004** (structure-based TTC) | Utrecht / Southampton / Fraunhofer / RIVM / Swiss FOPH — convened under **ILSI Europe** (industry-funded) | academic/gov't under an **industry umbrella** |

What this means for the series

The contrast sharpens the thesis. The same threshold-of-acceptable-harm logic appears on two tracks with opposite sponsors:

- **Human / de minimis: industry-born and industry-pushed** — Frawley (Hercules), the SPI/MCA campaign, Keller & Heckman; and the TTC that descends from it was written at McCormick, RIFM, CanTox, and under ILSI.
- **Ecological / SSD: government-and-academic-born** — the U.S. federal water agency (→ EPA), RIVM, VU Amsterdam, Danish NERI — then **progressively industry-shaped** (P&G and ECETOC co-authoring the statistics and the consensus; ECETOC tuning the assessment factor down).

The lesson is the one the genealogy already drew, now backed by names on title pages: the de minimis idea does not need a corporate sponsor to spread — regulators reach for it themselves — but **once it is the regulatory machinery, industry takes a seat at the table and works the one lever that remains, the size of the safety factor.** On the ecological side that lever is the assessment factor on the HC5; on the human side it was Frawley's complaint that the factor of 100 was "overly conservative." Different sponsors, same lever.

Open / next

- **[open]** Confirm Posthuma 2019's full author affiliations (page-1 extraction returned blank — it is RIVM + US EPA per the metadata; verify from the PDF).
- **[open]** The **funding/acknowledgements** lines (not just author affiliations) — e.g., Kooijman's Dutch Ministry funding, and any industry funding of the "consensus" papers — would sharpen the sponsorship picture.
- **[open]** Trace **Scott Belanger (P&G)** and **ECETOC**'s role across the SSD-guidance literature: are the same industry actors repeatedly on the methodology-setting bodies (SETAC Pellston, ECETOC task forces, the EU TGD revisions)? A recurring-names map would be the ecological counterpart to our SPI/Keller-&-Heckman campaign reconstruction.
- **[wishlist]** The two most important missing critiques (Forbes & Calow 2002; Newman et al. 2000) and the test-species-selection paper (Maltby et al. 2005) — see `papers/_WISHLIST.md`.