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Obituary

Prof. Em. Dr. med. Alex Vermeulen (1927–2023)—A Giant in Endocrinology

Carl De Crée [1,2]

[1] Laboratory for Exercise Physiology and Endocrinology, Sports Medicine Research Laboratory, B-2800 Malines, Belgium; prof.cdecree@earthlink.net; Fax: +44-870-762-1701
[2] Faculty of Arts and Philosophy, Ghent University, B-9000 Ghent, Belgium

Abstract: Alex Vermeulen (1927–2023) was a leading Belgian endocrinologist whose name will forever remain linked to testosterone and androgen metabolism. As a dedicated scientist and clinician, he made seminal contributions to endocrinology throughout his career. These included the development of chromatography and radioimmunoassays of steroid hormones. His work also focused on the biological significance and metabolism of corticosteroids and androgens, and he defined key concepts in the role of steroid hormones in the human menstrual cycle, pregnancy, and menopause. His love for math, endocrinology, and problem-solving led to a formula for the estimation of free testosterone in serum, which has not been improved upon to date and is still in use worldwide. He contributed to enhancing our understanding of the role that male sex hormones may play in a variety of clinical problems in endocrinology, including bone health, type 2 diabetes, and, especially, endocrine function in aging males. Alex Vermeulen literally was "a giant in endocrinology". Beyond his scientific contributions, Vermeulen was a wise and engaging mentor, a Renaissance man, and an aficionado of the finer things in life. He owned an eclectic choice of modern artworks, all of which he bequeathed to the Ghent Museum of Fine Arts, thus significantly enhancing the museum's art patrimony.

Keywords: androgens; andropause; bereaved; education; endocrinology; history; hormones; metabolism; mentoring; testosterone

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1. Introduction

Preceded in death by Baron Prof. Dr. Dr-hc. Paul Franchimont of the University of Liège (University Hospital Center (CHU) Sart Tilman) (1934–1994), Prof. Em. Dr. Pieter De Moor of the Catholic University of Leuven (KU Leuven—University Hospital Saint-Raphaël & Gasthuisberg) (1921–1996), and Prof. Em. Dr. Jacques Corvilain (Francophone Free University of Brussels (Université Libre de Bruxelles—University Hospital Center (CHU) Brugmann) (1923–1998), Alex Vermeulen of Ghent University (University Hospital Ghent (UZ Ghent)) (Figure 1) was the last surviving member of a generation of illustrious pre-World War II-born Belgian endocrinologists who during their academic careers taught and trained thousands of young Belgian residents in internal medicine, pioneered various new developments in their field, and attracted worldwide respect and acclaim.

Alex Vermeulen has made seminal contributions to endocrinology, especially in the field of sex steroid metabolism, including the development of chromatographic analysis and radioimmunoassays for corticosteroids, estradiol, testosterone, and other androgens. He was instrumental in defining key concepts in the regulation and role of steroid hormones in the human menstrual cycle, in pregnancy, menopause, and aging, and he con-

tributed to enhancing our understanding of the role that androgens play in a variety of clinical problems.

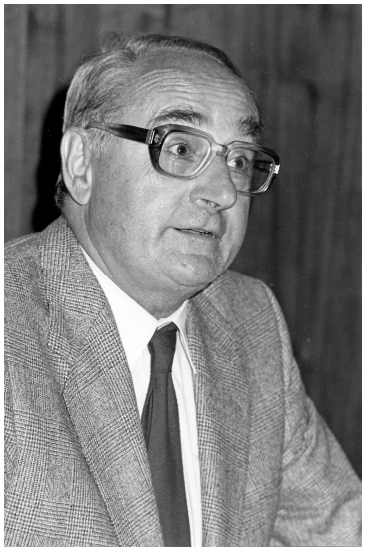


Figure 1. The late Alex Vermeulen (1927–2023), esteemed professor emeritus of endocrinology and metabolism, skilled clinician, respected researcher, valued mentor, former Dean of Medicine (1982–1986) State University of Ghent (R.U.G.), now Ghent University, and former Head Physician (1987–1991) of Ghent's University Hospital.

In life, Alex Vermeulen served on the Editorial Boards of several scholarly journals in the fields of fertility and endocrinology, including *Contraception*, *Fertilité et Sexualité*, *Hormone Research*, *Impotence*, the *Journal of Endocrinological Investigation*, *Journal of Steroid Biochemistry*, *Maturitas*, and *The Prostate*, and he held leadership roles in numerous professional organizations. He was a past president of the *Société Belge d'Endocrinologie*, a past vice-president of the *Royal Flemish Academy of Medicine in Belgium*, and a member of the *Deutsche Gesellschaft für Endokrinologie*, the *American Society of Andrology*, *Endocrine Society* (USA), the *Société d'Andrologie de langue Française*, the *Société Française d'Endocrinologie*, the *Society for Advancement of Contraception* (SAC), the *Society for Endocrinology* (Great Britain), and an honorary member of the *Società Italiana di Ginecologia e Ostetricia* (SIGO). He was also a member of the *Endocrine Society* (London) and the *Société Française d'Endocrinologie*.

It was Sir Isaac Newton who once said, "If I have seen further, it is by standing on the shoulders of giants". Alex Vermeulen literally was such a giant, a giant in endocrinology. Beyond his scientific contributions, Vermeulen was a nurturing mentor, a Renaissance man, and an aficionado of the finer things in life. Time after time, he showed how one can effectively lead by serving. For these reasons, reflecting on his life for a few moments is worthy of our attention.

2. Childhood

Alex Vermeulen was born (7 March 1927) and raised in Laethem-Saint-Martin [Dutch: Sint-Martens-Latem], a picturesque municipality of about 8000 inhabitants located in the province of East Flanders, Belgium. Nestled along the banks of the scenic River Lys [Dutch: Leie], the town has long been a favorite of an eclectic mix of Belgian artists of international repute, predominantly painters and sculptors working in the Flemish expressionist style, formally known as "the Laethemer Group" ["Latemse School" in the local language]. Several among them produced works of art that today frequently change ownership for multiple hundreds of thousands of euros or dollars at auctions worldwide. Laethem-Saint-Martin's somewhat secluded location—there is neither a train station nor any freeways

crossing its territory—despite being relatively close to the city of Ghent, Belgium's third largest city, has made it a favorite for many of the country's most affluent families and notable citizens to establish residence.

The Vermeulen family consisted of Alex's father Maurice Vermeulen (1899–1990), originally hailing from Ghent, his wife Maria née Coussement (1900–1989), hailing from the West Flemish village of Oyghem [Dutch: Ooigem], and their only son Alex with his two siblings Monique and Nicole. Alex Vermeulen reflected on his youth days as follows: "I grew up in the atmosphere of the Laethemer Group. The children of Servaes [Note: Albert Servaes (1883–1966), Flemish expressionist painter] and Gevaert [Note: Edgard Gevaert (1891–1965), Flemish impressionist-luminist and symbolist painter] were my classmates in the village school and children at home. Jules De Sutter's [Note: Jules De Sutter (1895–1970), Flemish fauvist and post-expressionist painter] studio was, as it were, in our backyard, Minne's [Georgius 'George' Minne (1866–1941), Flemish symbolist painter and Art Nouveau sculptor] house was located next to the bus stop where we took the bus to school. I was literally born under the sails of the Dutch windmill of Laethem-Saint-Martin, depicted in some paintings by the Laethemer Group. I still see the work of art by Gustave Van de Woestijne (1881–1947) [Flemish symbolist and expressionist painter] hanging in the village church and I can still taste the particular cultural atmosphere in which both the municipal council and the Dominicans with their summer residence in the Laethemer forests played an important part. My interest has broadened over time to also include international modern contemporary art, although this does not mean that I appreciate all contemporary art equally. Undoubtedly, at least in my opinion, there is still a lot of chaff among the wheat of contemporary art. But as a child of his time, one must be interested in the art of his time, not only in painting, but also in sculpture, architecture, music and literature, even though it is obvious that we will not appreciate everything equally." (. . .) [1] (p. 3).

Alex's decision to attend high school at Ghent's Royal Athenaeum rather than at the elite Jesuit Saint Barbara College at first may sound a somewhat surprising choice were it not that according to his father Maurice, the Athenaeum had the stronger math program. Continuously aiming for the best without making compromises would become characteristic of Alex's personality.

3. Education and Training

It was the influence and social engagement of the Vermeulen family's general practitioner, Maurice A.M. Dewulf, MD (1883–1955), who lived in the neighboring village of Saint-Denis-Westrem [Dutch: Sint-Denijs-Westrem], that would steer Alex towards studying medicine. Dewulf was an old-school physician who had an excellent clinical reputation, but he also was a trusted adviser to many local families who had lived in the area for several generations; rather than charging his patients per visit, Dewulf would send them a bill only once per year after careful reflection and moderation for the financial means of the patient [1].

After concluding senior high school, Alex enrolled as a medical student at the State University of Ghent (R.U.G.), where in 1947 he obtained his undergraduate degree cum laude in physics and medical sciences, and 4 years later, in 1951, he obtained his MD also cum laude. Subsequently, Alex went on to complete a Master's (then still called 'Licentiate') degree cum laude in Biochemistry, after proposing a thesis on the subject of the metabolism of D-Galactonate in Aerobacter cloacae under the guidance of the reputed Ghent biochemist and enzymologist Prof. Dr. Lucien Massart (1908–1988) and molecular biologist Prof. Dr. Jozef De Ley (1924–1997). The results of his thesis research also led to Alex's first English-language scholarly publication in the June 1953 issue of *Enzymologia* [2].

The 1950s represented the starting period of the field of endocrinology as we know it today, and clinical assessment took a central place in diagnosing the patient. The few technical investigations then in existence were used to complete or fine-tune that diagnosis. Although bioassays to determine hormone and biochemical concentrations did already exist for many hormones and chemical substances, those analyses were often elaborate and complicated and had too low a sensitivity to routinely make use of them in the diagnostic process. It is mostly thanks to realizing the importance of reliable and straightforward methods for hormone and biochemical analysis in urine and blood that endocrinology later, during the 1960s, would evolve into a crucial and recognized sub-specialism of internal medicine.

In 1953, Alex Vermeulen became a clinical resident in internal medicine and assistant to Prof. Dr. Paul Regniers (1901–1971), then Chair of the Clinic of Internal Medicine of the Hospital of the R.U.G. Alex explained his decision as follows: "The choice for endocrinology was based on the conclusion that I am particularly clumsy. Naturally, this meant that all surgical specialties for me were off the table, but also in Internal Medicine I had to choose a sub-discipline where I did not run the risk of perforating a bronchus or an esophagus when using a rigid endoscope. Moreover, I have always been interested in biochemistry and in the meantime had obtained a degree in biochemistry, so that ultimately endocrinology was a logical choice." (. . .) [1] (p. 3).

From February to May 1954, Alex spent part of his residency with Prof. Dr. Jean-Luc de Gennes (1927–2020) at the Broussais Hospital in Paris, where de Gennes, until 1959, was the chief clinical officer (CCO), before later moving to the University Hospital Center (CHU) *La Pitié-Salpêtrière* also in Paris. There, he served as a Professor and Chief of the Division of Endocrinology and Metabolism (1975–1993) and Consultant of Endocrinology (1993–1996).

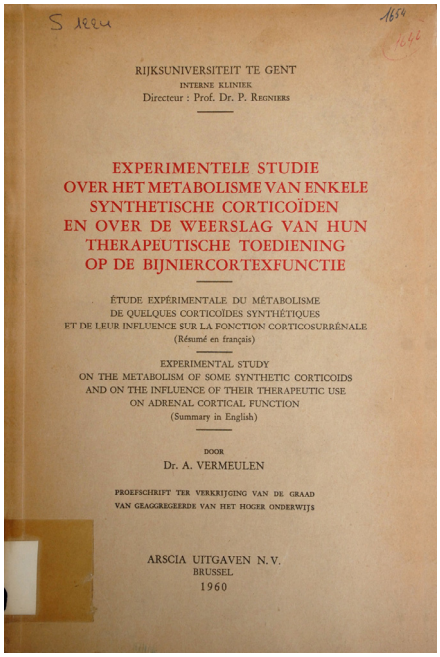
4. Starting a Career in Academia

Alex's sharp mind and ambition were recognized early during his residency. In 1956, he became Laureate of the Royal Flemish Academy of Medicine in Belgium. Two years later, a scholarship from the British Council (November 1958—April 1959) allowed him to temporarily join and receive mentorship from Prof. Charles H. Gray (1911–1997), a distinguished biochemist at the Department of Chemical Pathology of King's College Hospital and Medical School in London, who had developed particular expertise in adrenal and corticosteroid metabolism. Upon his return to Ghent, having become an attending physician in internal medicine with additional training in endocrinology, Alex was appointed demonstrator/work leader at his Alma Mater in 1959, not in a small part thanks to the help of his biochemistry thesis advisor, Prof. Dr. L. Massart, who also happened to be the vice president of his university's Board of Trustees.

It was 1960 when Alex's research work culminated in the presentation and successful public defense of his *Doctor habilitatus* of Higher Education in Medicine [Dutch: 'Aggregatie'] dissertation, entitled *Experimental study on the metabolism of some synthetic corticoids and on the impact of their therapeutic administration on adrenal cortex function* (Figure 2).

That same year, he won a Fulbright Research Fellowship and a Senior Research Fellowship at the Roswell Park Memorial Cancer Institute in Buffalo, NY, where between August 1960 and June 1961, he would work under the supervision of Prof. Dr. Avery A. Sandberg (1921–2016). Sandberg, a Polish-Jewish immigrant, was a hematologist and chromosome expert and the Chief of the Institute's Genetics and Endocrinology Department. When he returned home from this research sabbatical, Alex was appointed to assistant professor (1961) at the R.U.G.'s Clinic for Internal Medicine. In 1964, he was invited to spent time conducting research at the Worcester Foundation for Experimental Biology in

Shrewsbury, MA (which later merged with the University of Massachusetts Chan Medical School), with Dr. Eliahu Y. Caspi (né Silberschatz) (1913–2001), another Polish-Jewish immigrant biologist, and with Dr. Gregory G. Pincus (1903–1967), both experts in steroid biochemistry. Shortly after (1965), his home university in Ghent promoted Alex to associate professor, and two years later to full professor. In 1969, he was elevated to senior full professor.


RIJKSUNIVERSITEIT TE GENT
INTERNE KLINIEK
Directeur : Prof. Dr. P. REGNIERS

EXPERIMENTELE STUDIE OVER HET METABOLISME VAN ENKELE SYNTHETISCHE CORTICOÏDEN EN OVER DE WEERSLAG VAN HUN THERAPEUTISCHE TOEDIENING OP DE BIJNIERCORTEXFUNCTIE

ÉTUDE EXPÉRIMENTALE DU MÉTABOLISME DE QUELQUES CORTICOÏDES SYNTHÉTIQUES ET DE LEUR INFLUENCE SUR LA FONCTION CORTICOSURRÉNALE
(Résumé en français)

EXPERIMENTAL STUDY ON THE METABOLISM OF SOME SYNTHETIC CORTICOIDS AND ON THE INFLUENCE OF THEIR THERAPEUTIC USE ON ADRENAL CORTICAL FUNCTION
(Summary in English)

DOOR
Dr. A. VERMEULEN

PROEFSCHRIFT TER VERKRIJGING VAN DE GRAAD VAN GEAGGREGEERDE VAN HET HOGER ONDERWIJS

ARSCIA UITGAVEN N.V.
BRUSSEL
1960

Figure 2. The Cover page of Alex Vermeulen's June 1960 dissertation presented for his promotion to *Doctor habilitatus* of Higher Education in Medicine at the State University of Ghent (R.U.G.), now Ghent University [3].

5. Alex Vermeulen, the Scientist

Alex Vermeulen soon became known worldwide for his work in the field of sex hormones. *Web of Science* lists 217 publications for him, with an H-index of 55. A substantial part of his research was devoted to furthering our knowledge about corticosteroid metabolism [4,5] and adrenal androgens [6–9]. He investigated their biological nature [4], their origin [7,9], their metabolism [6,10], their metabolic clearance and blood production rates [10], and how they responded to a variety of biochemical stimuli [11]. His love for math, endocrinology, and problem-solving led him to develop a formula for the estimation of free testosterone in serum using a self-designed calculator based on the mass action law. This formula remains in use worldwide and has been made freely accessible to clinicians and researchers [https://www.issam.ch/freetesto.htm (accessed on 18 September 2024)]. His 1999 paper describing this formula [12], which has since been cited 3099 times according to *Web of Science* (and over 3400 times according to *ResearchGate*), represents his highest cited publication.

Alex Vermeulen contributed to enhancing our understanding of the role that androgens may play in a variety of clinical problems, including bone health, obesity, type 2 diabetes, and male infertility. He was also instrumental in defining key concepts in the regulation and role of steroid hormones and their metabolites in the regulation of the human menstrual cycle [13,14] and pregnancy [15], and he investigated the metabolic effects of oral contraceptives, such as ethinyl estradiol and cyproterone acetate, to improve their safety [16,17]. Even as a young scientist, Vermeulen was very interested in hormonal aging, initially in women. Hence, he investigated the effects of menopause on steroid

behavior [9,18–20], but he soon switched his focus to the 'age-related decline in androgen levels' in men [21–23]. In his view, men were much easier to study than women. "After all, men do not have periods, do not take hormones and do not become pregnant", all reasons to make them more popular with an endocrinologist. Alex Vermeulen was also very quickly interested in the phenomenon of male menopause, in those days still called 'andropause'. Hence, Alex Vermeulen researched, found, and published that andropause exists, albeit somewhat milder than menopause in women. However, the age at which "the turning of the years" occurs in men seemed variable and has undergone quite a bit of evolution during the career of Alex Vermeulen: in the end, his lab collaborators and many a student concluded that andropause could at best be determined according to the simplified formula 'Age A.V. + 20' . . . ([1], pp. 106–107).

Alex Vermeulen thrived in the laboratory setting, where he was utterly devoid of constraints and fear and felt free to experiment and innovate (Figure 3). "As a lab director and principal investigator, Alex Vermeulen's arrivals at the lab usually generated a flurry of hyperactivity or even panic among the personnel. Fortunately, lab staff had developed their own coded signs and language, so that any personal damage to those of fragile character tended to be limited to just one victim or black sheep, typically located in the first lab he decided to visit that day. Preventive action by trying to quickly run away and go into hiding rarely proved effective, because the targeted victim, upon his or her return, would invariably discover a handwritten note or memo at that their desk or lab station. Over time, these interactions evolved into an actual method of teaching, in which Alex Vermeulen had developed great expertise. The content of his memorable notes consisted of original texts supplemented with questions and exclamation marks, and always, as befits a good artist, signed with the initials 'A.V.' " (. . .) [1] (p. 107). Somewhat ironically, these initials when pronounced in his native Dutch language sounded identical to the greeting expressed in Latin to Roman centurions, *legati legionis*, *praefectī*, and the like.



Figure 3. Alex Vermeulen (1927–2023) (right) conducting experiments in his old lab at the former State University of Ghent (R.U.G.), now Ghent University, in the early 1970s.

As his clinical work and research publications increasingly drew international attention, Alex Vermeulen's reputation grew rapidly. He gained the respect of such icons of endocrinology as Ernst Knobil, PhD (1926–2000) [1], another pioneering endocrinologist inter alia known for describing the crucial role of pulsatile gonadotropin-releasing hormone and estrogen feedback in the menstrual cycle. King Baudouin I of Belgium (1930–1993) awarded Alex several Honorary Distinctions in the National Orders (Royal Orders of

Chivalry) for his clinical and scientific contributions to endocrinology: *Knight in the Order of the Crown* (1963), *Knight in the Order of Leopold* (1968), and *Commander in the Order of Leopold* (1982). In November 1986, Alex was awarded the Ernst Laqueur Prize of the Dutch Society for Endocrinology. This was a particularly fitting tribute, as Ernst Laqueur (1880–1947), a Polish-German-Dutch-Jewish physiologist, pharmacologist, and endocrinologist, was a pioneer in the field of hormone research. He was one of the first to isolate estrogens from horse urine, and in 1935, the first to isolate testosterone from the testicles of bulls. Considering Laqueur's historical merits in the discovery of steroid hormones, it would be hard to find a more suitable laureate for the award named after him than Alex Vermeulen.

6. Alex Vermeulen, the Teacher

Future physicians at the R.U.G. typically had their first encounter with Professor Vermeulen the teacher during their fourth or fifth year as a medical school student. "Seated in the lecturing theater, a tall figure would suddenly appear on the podium at the front slamming the door closed behind him, and seemingly pressed for time any sort of introduction was generally skipped as 'nonessential'. The pace of the lecture constantly was high to very high, with hardly any pauses in between sentences or even chapters. His lecturing style in today's jargon undoubtedly would be characterized as 'old school'. It must be emphasized that Professor Vermeulen's lectures were never boring though students sometimes felt like they were watching a tennis match on Wimbledon, with Vermeulen walking the podium from left to right like a restless caged wild feline, never remaining in the same spot for more than two seconds" (. . .) ([1], pp. 96–97).

Classes much like exercise training also seemed geared towards developing a solid physical condition and the necessary stamina. For those students closest to despair there also was positive news, namely a new textbook on endocrinology fresh from the press, with the ink still wet, authored by 'A. Vermeulen' [24]. Despite its size, the textbook originally published in 1970 was a success and was reprinted and expanded in 1974 and 1982.

Clinical lessons from Alex Vermeulen were unique in their kind, with the meme circulating among students being "the rarer the diagnoses the better" [1] (p. 99). "Firstly, the patient would be subjected –by him personally!—to a barrage of questions. If he or she did not respond quickly enough to these volleys, professor Vermeulen would give the desired answers himself. Then came the clinical examination . . . always starting at the neck. The patient usually would first turn white (out of fear), then red (from emotion) and finally blue (until Prof. Vermeulen ceased his chokehold). In the meantime, all the patient's cysts and nodules would be professionally squeezed by the oversized hands of the master" (. . .) [1] (p. 99).

However, the most discussed topic among young medical students, both male and female, dealt with a remarkable table of pubertal development in males resulting from Alex Vermeulen's research. This infamous table depicted drawings and ranges of the length and girth of the male member [1] (p. 100). As may be expected, these kinds of 'academic' discussions went on far beyond the limits of the lecture halls and frequently were continued during lunch, dinner, and other events far into the wee hours of the night.

7. Alex Vermeulen, the Mentor

I remember Alex Vermeulen as one of my foremost mentors. Fresh out of medical school, I decided to further my education by pursuing a research doctorate in sports medicine. My research would focus on how acute exercise and training affect the menstrual cycle and how to remedy any potential consequences [25]. The complexity of my project necessitated the guidance of a second doctoral advisor with expertise in endocrinology. Hence, without delay, I started looking for the most reputed and experienced endocrinolo-

gist in the country. I quickly discovered that the name 'Alex Vermeulen' prominently stood out due to his extensive publication record on relevant topics, the numerous citations by other authors, and the prompt nods of approval from fellow internists and endocrinologists I consulted.

Soon after, I called Ms. Sonia Blondé, my prospective second advisor's highly efficient and friendly secretary, made an appointment, and hopped on the train to Ghent for what was going to be my first meeting in person with Professor Alex Vermeulen, then also Dean of the State University of Ghent's Faculty of Medicine. I was impressed, honestly, and I am not easily impressed. His considerable stature—he stood almost 6′3″ (1.90 m) tall and hence he towered over most of his colleagues, staff, and patients—made his presence even more imposing. It was clear to me from the very start that he was a mentor pur sang. He was kind, astute, inquisitive, helpful, encouraging, and never rushed, and my respect for him was instantaneous. He too was respectful to me at all times. His criticism on my research or manuscripts, even when hard, was always fair and intended to strengthen my work. He was not territorial and considered every topic a research student embarked on as an opportunity for him to expand his already encyclopedic knowledge (Figure 4). Alex Vermeulen always played the ball not the man.



Figure 4. Alex Vermeulen in the early 1970s seated at a desk in his old lab at the former State University of Ghent (R.U.G.), now Ghent University, reviewing experimental data sheets presented to him by an assistant.

While Vermeulen did not appear to have frequently used physical exercise as a stress situation model to investigate the metabolism of steroid hormones, his insights and expertise previously had been welcomed when in the 1960s and 1970s his colleagues, pharmacologist Prof. em. Dr. med. André De Schaepdryver (1926–2011) and veterinary pharmacologist and toxicologist Prof. em. Dr. med. vet. Michiel Debackere (1930–2013), were initially approached by horse racing professionals and federations and later also by the *Union Cycliste Internationale* (UCI) [International Cycling Union]. These organizations sought the university's expertise in characterizing and detecting steroid hormone abuse in racing horses and cyclists participating in sports contests. These events formed the foundation of the State University of Ghent's Doping Control Laboratory (DoCoLab) created in 1973, and currently one of only thirty WADA-recognized doping control labs [26]. Moreover, the Ghent DoCoLab, currently led by Prof. Dr. ir. Peter Van Eeno, is the oldest continuously operating doping lab, which over the years has also regularly published scholarly papers that introduced new or improved analytical processes and detection methods.

8. Alex Vermeulen, the Administrator

In terms of his personality, Alex described himself as rather reserved and believed that, like many introverted people, he could be perceived as aggressive. He felt he did not easily make social connections and often held back when he disliked something. This could lead to frustration and grievances accumulating, and when encountering the proverbial last straw, he might react too disproportionately.

Nevertheless, this did not stand in the way of him being highly effective in fulfilling a long list of leadership positions, including the following:

- Director of the International Society for the Study of the Aging Male (1997–2006).
- Chief of his university's
  - Division of Endocrinology (1991–1992);
  - Faculty Center for Medical Genetics (1986–1992);
  - Laboratory for Gerontology, Dietetics and Nutritional Hygiene (1986–1992);
  - Faculty Center for Human Reproductive Biology (1985–1992), Clinic for Internal Medicine (1972–1975).

He also served as the State University of Ghent's Dean of Medicine (1982–1986) and Ghent's University Hospital's first Head Physician (1987–1991). In fact, he took over at a particularly difficult time for the hospital due to budgetary challenges, and significant restructuring was necessary to save the hospital from disaster (Figure 5). Rather than standing in the way of success, his personality seems to have well fitted the profile of leadership.



Figure 5. The State University of Ghent's (now Ghent University) former Academic Hospital (in 1987 renamed 'University Hospital' or UZ Ghent) from July 1987 through June 1991 led by Alex Vermeulen as its Chief Medical Officer. Previously, he had already held the positions of Chair of Endocrinology and Hematology (since 1969) and Chair of Internal Medicine (1972–1975). Between 1982 and 1986, he was also the university's Dean of Medicine.

However, as much as the reader may be impressed by all these professional achievements, Alex himself expressed a far more relative and skeptical view when reflecting about these accomplishments: "Holding a series of leadership positions is a consequence of an unfortunate set of circumstances. At a faculty meeting I was noticed because of an

intervention I made during a discussion about the change in our university's medical curriculum resulting in me being appointed Chair of the Teaching Committee. I succeeded in getting a new curriculum approved whereas repeated previous attempts by others had failed. Perhaps that is why I was invited to a meeting of some influential faculty and board members where the upcoming search and election of a medical dean was being discussed. Much to my surprise they wanted me as a reserve candidate, although I certainly had no ambition for this position. In the end I gave in and during further discussions my name was suddenly put forward as the sole candidate for the vacant dean's position. Coincidentally, I would like to point out that there were few applicants and that I allowed myself to be convinced considering that administrative tasks, such as chair, delegate to the Board of Trustees, or dean, had to be divided, with each administrator carrying part of the load. However, among the faculty only a handful of members was willing to take on such tasks despite these simply needing to be fulfilled. In addition, one must be accepted by a two-thirds majority of the faculty so that potential candidates are kept to a minimum. When I was elected dean, there was no opposing candidate, which clearly shows how very attractive this position must have been . . .

As a dean of medicine, one concomitantly was also chairman of the university hospital's Board of Directors at the time, a position that, despite the many years of attempts by my predecessors to bring about some change, in fact meant absolutely nothing. However, when the hospital was virtually bankrupt, the Board of Trustees set up an Executive Committee, one of whose members was the dean of medicine. When my second mandate as a medical dean came to an end and I chose not to be available for a third mandate, it was felt that I should continue to put my acquired knowledge and experience at the service of the medical school and hospital as a chief medical officer. Once again there was no other candidate; I would like to add that being chief medical officer is the most ungrateful job I have ever done. Undoubtedly these administrative chores have had a negative impact on my activities as the Chair of Endocrinology and as a scholar and I would certainly not recommend that any chair of an important medical department who has scholarly interests take on these tasks." (. . .) [1] (pp. 3–4).

9. Alex Vermeulen, the Person Beyond the Academic and Clinician

A number of anecdotes circulated outside the lecture hall and lab about Alex Vermeulen's legendary absent-mindedness. For example, he is said to have "taken up the habit" of dropping his drinking glass at the start of a reception or party. This rumor had begun to lead a life of its own, to the extent that those present would allegedly only feel relaxed enough after this event so that the party could really begin! Such things were in stark contrast to the thoroughness with which he conducted experiments or tackled complex problems [1] (p. 102).

"Attending a scientific meeting or congress with 'the boss' also became a memorable experience from the very moment one started the outbound journey in Ghent. The professor often suggested driving himself, which created a dilemma for co-workers. This is not so hard to understand, if one knows that over a period of six years he totaled three cars of a Swedish brand precisely known for making very safe cars to the extent that their cars are sometimes nicknamed 'civilian tanks' [Note: the brand for a limited period between 1941–1945 actually did manufacture types of cars known as *Stridsvagn m/42*]. Totaling such a car, let alone totaling three of them, saddles you with a certain reputation.

As a prank, co-workers of Alex Vermeulen therefore would try to lure novice staff members into being seated next to the professor in his car cynically adding that being allowed to do so was a great privilege." (. . .) [1] (p. 108).

His former colleague Jean-Paul Deslypere, MD, PhD, remembers "Once at the conference, things certainly did not calm down. Attending a lecture while being seated next to Alex Vermeulen certainly was very fascinating, but at the same time also rather exhausting because he typically had so many comments about the speaker and the contents of his lecture, that in essence you were forced to listen to . . . two simultaneous lectures. For Alex himself, attending a keynote lecture given by a colleague was not limited to a mere mental effort. Rather he seemed to be following some sort of exercise schedule which combined mental and physical exercise that involved using nearly all muscles of the human body. All movements seemed to be allowed, from stamping on the floor with his feet when the speakers confirmed something Alex already had long discovered himself, to clamping his head in his hands in despair when the speaker uttered what Alex considered as a inanity, to combing his hair backwards with his fingers as if he was debating for himself whether to speak up or not." (. . .) [1] (p. 108).

10. Retirement Thoughts

In 1992, Alex Vermeulen retired and was promoted to emeritus professor, a year after the State University of Ghent (R.U.G.) had changed its name to Ghent University (UGhent). Upon retirement, he reflected on how medical education had changed:

> "Unfortunately, our university is evolving more and more into a vocational school focused on vocational training. For example, one may wonder whether the countless master's degrees that are being established in the context of one or another college at our university actually belong within the university. University education must provide students with the basic knowledge and the necessary critical sense to question this knowledge; students must be taught to acquire and critically evaluate knowledge. Acquiring technical skills is largely part of postgraduate education. The previous generation, of which I would like to mention my mentor Prof. Regniers as an example, possessed a much more limited technical knowledge, but a much broader humanistic view of medicine." (. . .) [1] (p. 5)

In my opinion, Alex Vermeulen's comments more than ever still apply today. The SARS-CoV-2 (COVID-19) crisis has upset long-established academic teaching methods, and the lightning-quick arrival and maturation of Artificial Intelligence already have and will continue to reshape the landscape of medicine and teaching and learning medical principles and skills. That being said, repairing a device and curing a human being still are two very different tasks.

Asked about his biggest regrets, Alex answered: "As for my major disappointment, I am a realist, I do not have too many illusions and therefore I do not have too many disillusions. However, I regret that so many former co-workers have lost their connection with our department and that some even after they had established a fruitful career have never revisited the department. At this point I cannot identify any immediate reason for this phenomenon, but undoubtedly our department itself is likely partly responsible. In future this is something we certainly need to address." (. . .) [1] (p. 5).

From a close-knitted small group that had a true 'we feeling', his department had grown and transformed into a conglomerate where people only experience superficial contacts, an inevitable consequence of the growth it sustained or of the spirit of the times? (. . .) [1] (p. 4).

Alex's comments were timely. The focus on performance, achieving tenure, meeting publication goals, and competing for grants indeed has made academic life more egocentric and more egoistic. A potential collaborator now is also often viewed as a potential competitor, a feeling that tends to subside only with advancing age.

Still very energetic and mobile and probably looking forward to less administrative chores and more research, Alex remained ebullient with positive energy, saying "As long as the sun shines I'll direct my feet to the sunny side of the street" [1] (p. 6), a saying derived from the lyrics of 'On the Sunny Side of the Street', a 1930 song composed by Jimmy McHugh and Dorothy Fields, that later became a jazz music standard interpreted by the likes of Louis Armstrong, Dave Brubeck, Nat King Cole, Ella Fitzgerald, Judy Garland, Lionel Hampton, and Frank Sinatra.

Alex Vermeulen continued publishing research, reviews, and editorials until many years after his retirement. His final paper on the clinical and therapeutic implications of the decline in androgen levels in elderly men appeared in print in the October 2005 issue of *Endocrine Reviews* and has nearly 800 citations in *Web of Science* so far [27].

However, when these activities came to an end, and when in 2012 an article in a newsletter from the Ghent Museum of Fine Arts (MSK) [28] detailed an important gift of five previously unknown works of art by Léon Spilliaert (1881–1946) [https://www.mskgent.be/collectie/2012-z (accessed on 18 September 2024)] (Figure 6), a prominent Symbolist Flemish painter, I suspected that Alex had arrived at a turning point in his life. This was not wholly unexpected given that his wife Anita 'Nini' (née Blanckaert) in the meantime (October 2001) had passed away too, and their marriage had remained childless.



Figure 6. "*Nighttime beach view*", a painting (*pastel on paper, 690 × 870 mm*) from 1905 by the prominent Flemish Symbolist painter Léon Spilliaert (1881–1946), previously owned and in 2012 donated by Alex Vermeulen (1927–2023) to the Ghent Museum of Fine Arts (MSK), where it now is on permanent display (Collection A. Vermeulen, inventory #2012-Z—www.artinflanders.be—Dominique Provost—public domain, accessed on 18 September 2024).

Alex Vermeulen was a Renaissance man, and art had long been his passion. Alex's wife Anita's maternal grandfather was Gustaaf F. Tratsaert (1875–1955), who used to operate a colonial goods business in Ostend. His business was just a few houses down the block from the home where Léon Spilliaert was still living as a bachelor with his parents. It was

rumored that Spilliaert, now and then, rather than paying for his purchases using cash money offered some of his works of art in return. The small art collection which Tratsaert accumulated during life would be inherited after his death by Vermeulen's wife, in this way ending up in the Vermeulen family home. In addition, Alex enjoyed visiting art galleries and auctions. He counted Jan Hoet (1936–2014), the well-known flamboyant Belgian 'art pope' and former curator of Ghent's City Museum for Contemporary Art (S.M.A.K.), among his personal acquaintances. Over the years, the Vermeulens were able to expand their valuable personal art collection to include an eclectic choice of Flemish, Belgian, and other European painters, printmakers, and sculptors in the abstract, Bauhaus, CoBrA, Flemish expressionist, surrealist, and symbolist style tradition, such as Pierre Alechinsky (1927), C. Karel Appel (1921–2006), Jean Brusselmans (1884–1953), Jean Dubuffet (1901–1985), James Ensor (1860–1949), Hans Hartung (1904–1989), László Moholy-Nágy (1895–1946), Serge Poliakoff (1900–1969), and Frits Van den Berghe (1883–1939).

Alex was a connoisseur and aficionado of the finest clarets, with a particular weakness for the great châteaux of Saint-Émilion, and he liked to share the delights of a good red with his closest friends, family members, and select colleagues, whom he once a year wined and dined at an exquisite restaurant. A reunion dinner in 2016 with all of Ghent University's then still living previous deans of medicine was the last event documented by the university in which he featured. He owned a property in Saint-Tropez, a fashionable holiday town in the Var department on the French Riviera, and until well in his 80s, he enjoyed traveling, faraway vacations (Figure 7), and cruises.

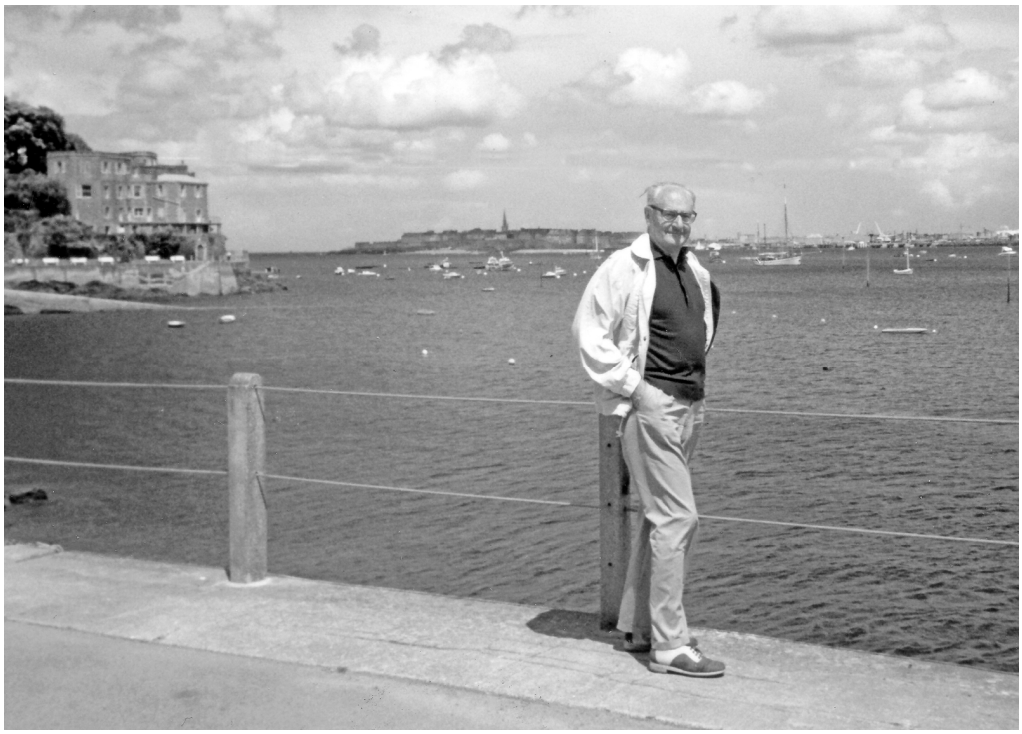


Figure 7. Alex Vermeulen (1927–2023), professor emeritus of endocrinology and metabolism enjoying retirement, photographed here in June 2007 in the picturesque French village of Dinard in Brittany.

11. Exeunt

Eventually, as we all must, Alex started experiencing a decline in health. In 2022, after enduring a few falls at his home, Alex reluctantly moved into an assisted living facility in Saint-Denis-Westrem near Ghent. Having withdrawn from public life and maintaining contact only with family and a few close friends, Alex Vermeulen left us, quietly. The

poignant and somber phrases on his death notice, seemingly evocating a sense of destiny yet also serenity, read the following:

On naît, on pleure [We are born, we cry]

On aime, on meurt! [We love, we die!]

These are two sentences extracted from self-written (nonpublished) poetry that he would typically refer to as his "Carmel verses".

Alex Vermeulen was preceded in death by his wife Anita ('Nini') and his sister Monique and is survived by his other sister Nicole. Alex and Nini did not have any children. His remains were cremated and his ashes in the privacy and presence of only his closest family members and friends were buried together with his wife's remains at the Scheldeakker Cemetery in Zwijnaarde near Ghent (note: their tombstone is located in court B, row 6, grave 5, at approximately 50°59′53″ N and 3°43′04.83″ E).

After his death, the remainder of his art collection was bequeathed to the Ghent Museum of Fine Arts, where it is now on permanent display in this way, allowing national and international visitors (>123,000 over the past year) to appreciate the many masterpieces which Alex had so tastefully and carefully collected during his life.

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