

[PII_REPLACE]

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Profile

Pierre Clavien: first a surgeon, and first a scientist

At the Wyss Translational Center Zurich (Wyss Zurich, Zurich, Switzerland), where technology and medicine join forces to promote pioneering therapies and developments in the emerging fields of regenerative medicine and robotics, the **Liver4Life** project is working on liver regeneration. Outside the body, deprived of essential nutrients and oxygen, a liver will survive 24 h at most. “However, what if we could build a perfusion machine to extend this period to 5 days, or even 10? We took our fancy idea to Wyss Zurich and they liked it”, says Pierre-Alain Clavien (professor at University Hospital Zurich, Zurich, Switzerland). “Whether we change the world with this machine, I don’t know, but it opens so many doors for liver transplantation and regeneration, cancer treatment, and organ shortage”.

Since 2000, Clavien has been at University Hospital Zurich, and is now chair of the department of surgery. Acting as mentor to the Liver4Life team, he will be an associate faculty member at Wyss Zurich for the duration of the project. He is clearly at the top of his field with vast clinical and academic experience, a substantial body of peer-reviewed published articles, and the recipient of many competitive research funding grants, but it was never a foregone conclusion. He was not born into a family of doctors and was the first in his family to go to university; “I never thought much ahead, and medicine was something I signed up for to keep my options open”, he says. Clavien is laid back but animated, with sparks of humour that may have been shaped by an astute observation of different people in different cultural environments. He loves travelling to experience cultural heterogeneity around the world, a perk of being an academic scientist that he appreciates.

On that basis, Switzerland was “too small” for Clavien, and after finishing medical school in Geneva, and a residency in surgery in Basel, Switzerland, he was still undecided in choosing his surgical field. Then he was offered a 2-year training post at the University of Toronto (Toronto, Canada) in liver surgery and transplantation. It was there he reached a “turning point”, staying for 5 years to complete his clinical training and PhD. “When I returned to Switzerland it was even smaller than it was when I left”, Clavien said, “but then I received an unexpected offer from Duke University in North Carolina. They were looking for a young crazy guy who wanted to work hard and develop a liver transplant programme.” Finally, after more than 5 successful years at Duke, now married with three young children, Clavien received yet another alluring offer, but this time back in Switzerland, in Zurich (the German-speaking part), a decision he wrestled with, first because “my German was poor back then—and is still far from optimal”.

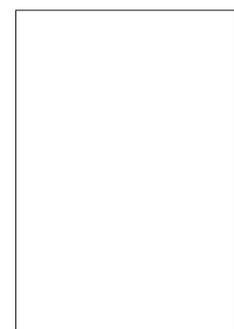
However, his main concern—that research opportunities would be sparse—turned out to be unfounded.

In 1994 Clavien set up a small laboratory at Duke and developed an interest in outcome research. Laparoscopic cholecystectomy was in its infancy and Clavien started recording benchmarking complications in both open and laparoscopic surgery. 10 years later, in Zurich, Clavien developed the **Clavien-Dindo classification system**, still used today as a surgical endpoint. Despite being told by “smart statisticians from Oxford” that a classification system that ranked complications by severity (0–100) was impossible, several years later Clavien enlisted the help of a group of epidemiologists, led by Milo Puhan (University of Zurich), who adapted a risk-index formula to generate a number—“something I talk about but still don’t understand”—that formulated a sophisticated comprehensive complication index (CCI) system, the embodiment of Clavien’s earlier vision.

The CCI metric illustrates Clavien’s invaluable contribution to the current hot topic—how to measure outcome. And he has many more strings to his bow, as recognised by professor of neuropathology Adriano Aguzzi (University Hospital Zurich), who is nominating Clavien for the prestigious **Marcel Benoist prize**. Although when this is mentioned Clavien laughs about “over exaggerated and inflated praise”, Aguzzi particularly commends “his ability to convert clinical observations to laboratory projects, and apply laboratory discoveries, including new pathways, to benefit patients”. If Clavien is the successful recipient, he says, it will “shine a strong light on exemplary translational research at the highest level”. Aguzzi also pays tribute to Clavien’s interest in academic leadership and the **impact of selecting the right, or wrong, chair of medicine**. His role as surgeon-scientist is one he advocates for in medicine; “In my opinion it is wrong for a surgeon to operate without understanding the basic science, and empathy must always be at the forefront of research. Just remember one day you will be a patient, I tell people. I train you because one day you will operate on me”.

Away from the office—the laboratory and the hospital—Clavien’s sporting interests are tennis, skiing, and football, but he is “not a fanatic”. Apart from a long-standing love of wine, he explains how generally his interests evolve from meeting fascinating people; “a patient of mine was from a Concrete Art group in Zurich...and now my office is full of Concrete Art”. Turning the spotlight on Clavien, his aspirations to learn more, discover more, and grab the right opportunities, pushes the boundaries of the improbable towards the possible.

Jules Morgan



For **Liver4Life** see <http://www.wysszurich.uzh.ch/projects/wysszurich-projects/liver4life/>

For more on the **Clavien-Dindo System** see *Ann Surg* 2004; **240**: 2015–13

For a **summary and recommendations on choosing an academic chair** see *Nature* 2015; **519**: 286–87

For more on the **Marcel Benoist prize 2017** see <http://marcel-benoist.ch/en/nomination-und-selektion-en/prix-marcel-benoist-2017>