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IN MEMORIAM

Filippo Giancotti: Of integrins, signaling, and risotto

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Filippo Giancotti passed away last month in New York City from complications of biliary cancer. Educated as a physician-scientist at the University of Torino, Italy, Filippo had come to America in 1988 to train as a postdoctoral fellow in La Jolla, CA. That's where I first met him. We were part of a small but boisterous group of Italian postdocs working on both sides of Torrey Pines Road. In essence, we were all the same. Self-starters and passionate about science, we were fundamentally no different from our ancestors coming to America a century earlier. We came by plane instead of a steamer, but we were all eager to leave behind the often tortuous and not always meritocratic academic world back home for something different, maybe even something better. We had no plans other than to immerse ourselves in the forge of science that La Jolla was in those years. It was the perfect place. We were not immigrants because everyone there came from somewhere else. And it didn't matter what schools we had gone to, who was our dad, and whether we had the *right* friends in the *right* places. It was just us and the science that we could do that mattered. We didn't know if we would go back. Our engine had only one gear: forward.

And Filippo enjoyed that gear to the fullest. A gifted experimentalist, an innovator, and a cell biologist at heart, Filippo pioneered the role of integrins as multifunctional receptors, serving in intercellular adhesion but also in intercellular communication. He uncovered disparate signaling pathways coordinated by integrin engagement and unraveled profound implications of those pathways in cancer: from the control of epithelial-to-mesenchymal transition to modulation of tumor suppressors to acquisition and maintenance of metastatic competence. Published in the top journals for impact, not impact factor, Filippo's work was innovative, thorough, and definitive. It stood the test of time and became the foundation of more research. It made careers for scores of young scientists who wanted to pursue a similar biology. *Making it* in integrin research in La Jolla was not easy: the place thought of itself as some sort of world capital of integrinology. Remaining relevant in the same field over the years was even harder. And yet, Filippo's engine continued to have only one gear: forward. His work led the field for the next three decades, mostly at academic institutions in New York City with a relatively brief stint in Houston. Built over the decades through rigor and resilience,

Filippo Giancotti. Photo courtesy of Lucia R. Languino.

Filippo's reputation was rock solid. Unassailable. He was a much sought-after speaker at the most prestigious conferences, trusted mentor for his laboratory trainees, and exemplary citizen for the academic institutions that had the luck and privilege to have him on their faculty. Continuously funded by the National Institutes of Health (NIH) since 1998, Filippo was recipient of both a MERIT award from the NIH and an Outstanding Investigator Grant from the National Cancer Institute. He took himself seriously. But not too seriously. There was often room for some self-deprecating comments. There was always room for his superb culinary abilities. The shocking diagnosis came out of nowhere in March of last year. Some weight loss, a little bloating. Stage IV cholangiocarcinoma.

I have many memories of Filippo, and they are all luminous. But one stands out. Inspires. We had invited Filippo to be a speaker at our Wistar/University of Pennsylvania distinguished lecture series. The invitation dated back almost 1 yr, way before that day in March. Close to the date, I asked him if he wanted to

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cancel: he was going through treatment—gruesome, exhausting. He asked me if I was joking. We make our speakers work for their meager honorarium. It's a full morning of meetings, the seminar, and more meetings with the faculty. And dinner afterward. We want to show off our place, where even the bricks want to do science. Filippo went through the day as if nothing had happened. His seminar was a marvelous journey of new discoveries. When we sat down for our one-on-one meeting, it was as if time had never passed. We were still those boisterous postdocs of 30 yr earlier. We complained about editors we knew and reviewers we thought we knew (but really didn't). Like postdocs, we joyously lambasted each other. I asked him when he would finally start working on something important. And he said that mitochondria had been a bore since they were bacteria four billion years ago and hadn't gotten any better with age. Filippo was a superb scientist. And an equally superb physician. He knew what he had. He knew the statistics. And he knew the sad state of affairs of oncology drug discovery. And yet he never wavered, he never was afraid. There was still only one gear in his engine: forward. And that is called courage.