

Jeff's View

Voices of the night

This issue of FEBS Letters features the final "Jeff's View". Over the past five years Jeff has provided the readers of FEBS Letters with 18 marvellous views, each of which have made us both smile at his wit, and stop and ponder for a moment. Whether we read them quickly, only extracting the essence of his view, or devour every word, we often find that later in the day our mind turns to one of the points that he has made. A sure sign of a successful essay!

For those of you who are going to miss Jeff in future issues of FEBS Letters, or would like to introduce his view to colleagues, friends, and family, we have put together the collection of his essays as a book. Entitled "Jeff's View on Science and Scientists", the book can be obtained directly through the Elsevier website.

At the Editorial Office we always eagerly awaited Jeff's next view and thoroughly enjoyed reading them. We are sad to see the last of Jeff's Views, and we would like to thank him for his wonderful contribution to FEBS Letters.

The FEBS Letters Editorial Office:

Felix Wieland, Patricia McCabe, Tine Walma, Anne Müller

Six years have passed since I retired. I no longer have a laboratory, an office, a research group, or a grant, but neither am I enchained to dull paper work, grading exams, racing against deadlines, or trying to stay awake at faculty meetings. At times the new freedom still makes me giddy or uneasy. As I reflect on my life and my career, each day is an experiment that might uncover something unexpected about me, the people I worked with, or what it means to be a scientist.

When I was still young and spent most of my time in the laboratory, I often worked late into the night and sometimes straight through it. Now I am back to this habit, lying awake and trying to sort through the jumble of unprocessed memories. To see them clearly against the noisy present, I avoid photons and wait for the small hours of the night. That's when the voices keep coming and start asking questions. What were your successes - and failures? Why did you fail when you did? What does it take to be a good scientist? And what would you do differently if you started all over again? The voices are insistent and their questions not always kind. I try to pit my strength against theirs, but they corner me at *The Hour of the Wolf* when my thoughts are adrift and my defenses down.

"What made your research get off the ground so quickly?" a voice asks. That's an easy one: "I decided to work with yeast when the advantages of this experimental system were not yet widely known". "But what made you choose yeast?" the voice persists. I wish I could say "brilliant planning, uncanny intuition, and exemplary scholarship", but the voices won't stand lies; so I swallow my pride and confess that it was plain dumb luck. It all started on the beach of a Greek island a few months before my final exams for a PhD in chemistry at the University of Graz. I had wanted to study biochemistry, but in those days my university had no biochemists on its faculty and offered no biochemistry courses of any kind. Since the ancient biochemistry text books in the university library were useless, I had concocted my own biochemistry course. First, I worked my way through the Biochemistry Section of *Chemical Abstracts*, a popular abstracting periodical our library did carry. Second, I jotted

down the names and addresses of the authors whose articles interested me most. Third, I bought several dozen picture-postcards of Graz and sent them to those authors with the modest request: "Dear Dr. X, please send me reprints of all your articles". Fourth, fifth and sixth, I waited, waited and wait...e...d., because airmail was then a luxury and I had sent the postcards by surface mail. Looking back, I am amazed that anybody answered them at all. Yet some did, the most generous of them being David Green, a leading authority on mitochondrial biochemistry who ran a big laboratory at the University of Wisconsin at Madison. Green had apparently taken me seriously and sent me a heavy package with several hundred reprints on the function and structure of mammalian mitochondria. I devoured these articles, mostly on benches in our local park, and soon lost myself in an enchanted world of graceful membranes and colorful cytochromes. I have never forgotten how decisive Green's response was for my scientific career and always try to answer every letter I receive, particularly if it is from a young scientist whose name is unfamiliar to me.

I had become fascinated by mitochondria and wanted to work on them as soon as I had my PhD, but since I knew so little biochemistry I had no idea where and how to start. In that summer before my finals, I joined an expedition of archaeologists who were looking for evidence of Hittite culture on Greek islands. For light summer reading, I had taken along those reprints I had not yet read, and started to sift through them on a sun-drenched island beach. Suddenly I noticed that one of the reprints was not from Green himself, but from one of his former postdocs. Some benevolent Greek goddess must have slipped this reprint into Green's package in order to let me know that this former postdoc was now running his own lab back home, that he was studying the biogenesis of mitochondria in yeast, and that he had found something exciting: When yeast cells grow in the absence of oxygen, they lose their mitochondria, but when they are then shifted to air, they get them back. This report made me instantly oblivious to Hittite archaeology. What a great system to find out how cells build their mitochondria! It was like an open invitation to put one's teeth into it. And that's exactly what I did. In the end, I found the story to be incorrect, but it got me started and soon led to some exciting discoveries.

"What does it take to be a good scientist?" another voice wants to know. Here, too, I am sure of my answer. Of course it takes intelligence. It also takes curiosity, originality, motivation, good health, ability to deal with people, and the right partner in life. And, as I just recounted, it takes luck. But more than anything it takes courage and passion: the courage and passion to question generally accepted ideas; to tackle a difficult research problem; and to opt for the long haul instead of the *Quickly Paper*. If I look back on my scientific failures, I now realize that I deserved them because I had not been passionate or courageous enough to go all out. Good science needs independent minds, but these are useless in timid people.

And the voices go on: "Did you help your students and postdocs to get passion and courage?" Now I am on slippery ground. I always told them that passion cannot be trained,

but that courage can, at least to some extent. If you want to develop your courage, don't count on lecture courses or books, but try to be around courageous people. Such personal role models are the most important gifts a university can offer its students. I wish I had paid more attention to this obligation when I still taught students and ran a lab. The bustle of academic life often made me forget that scientific talent is not so much a question of intelligence, but of character.

“And if you could start all over again?” If I could do that, I would give much more of myself to teaching. By “teaching” I do not mean the recitation of facts in front of a large class, but true teaching, in which I share with students my personal views on science, the world, and human existence. I would no longer heed the usual advice that research is more important than teaching. Why did I often worry about the “teaching load”, but never about the “research load”? When I now think back to my biochemistry introductory lectures, it strikes me that in each of these lectures several hundred bright young people had to sit still and listen to me for 1 hour. My own children would never have done that. What an incredible chance this was – and often I did not use it as I should have, because I wanted to get back to the laboratory.

We professors should not only dispense professional training, but also help our students to get rid of their prejudices and to think for themselves. And we should help them to find answers to Big Questions – questions about the meaning of their existence and their place in the physical and spiritual world. This sounds corny and old-fashioned, but it is anything but that. And here is one of the voices again: “Did you help your students to answer these questions?” I could have done better. What a shame, because whether or not students know or admit it, they are looking for these answers. And if they do not get guidance from us, they might fall prey to those who offer them ready-to-use absolute certainties – such as the honorable Mr. Bhagwan, may his soul rest in peace. Twenty-five years ago, this Indian gentleman reveled in Rolls Royce limousines and Rolex gold watches which he got from his groupies, many of whom had graduated from top US universities. These universities had been so eager to train their students for a profession that they somehow forgot to educate them. Such lapsed university graduates are living proofs that we university professors failed in our most important duty. Teaching was a rare privilege – one of the best parts of my scientific life. As I lie awake in the dark of the night, this seems as clear as day. Why did I not see this earlier?

Yet, if I had to start all over again, a university position would no longer be my automatic first choice. With few exceptions, Europe's universities have reneged on scientific excellence and are mired in the quicksand of politics, money, and bureaucracy. Their goal of academic self-administration has proved to be a mirage, because inspired scientists would rather do research and teach. Most of Europe's universities are now managed by not-so-good academics, who are officially in charge, yet play a poor second fiddle to armies of professional administrators. No wonder that more and more of our best young minds prefer private or public research institutes outside the traditional academic fold. Many of these institutes are solidly committed to long-term basic research and, unlike the majority of European universities, run international graduate programs. As a rule, they also select their academic staff more rigorously than universities do and offer better working conditions and more level hierarchies. Their staff members are usu-

ally free to participate in the teaching programs of near-by universities and often attract the brightest graduate students. While junior appointments are generally limited to five or six years, and even senior members hold less secure jobs than their tenured university colleagues, those with passion and courage consider this insecurity a small price to pay for a first-rate scientific environment. I have always worked at publicly funded universities and am a staunch supporter of what they stand for. But unless our European universities get their act together, their scientific performance is bound to lose out against that of the many exciting research institutes that are now springing up all over Europe.

And so my night visitors go on and on. At first I did my best to keep them at bay, but they still kept coming back at me. One way to give them the slip, I thought, would be to drown them with memos. When I was still an active professor, this tactic worked fine with officious deans or obstreperous colleagues. And do I know how to write memos! That's a professor's stock in trade. But professors are also good at making little things into big productions – and so the memos wound up being essays.

At first sight, writing essays looks easy. It is like writing scientific papers without experimental results and there is nothing to curb your imagination – or your prejudices. But it shows your face as it is, because no editor will smooth the wrinkles or extirpate the warts. And not having to prove anything makes it easy to lose track of where you are going. By the time you are halfway through an essay, you realize that you may be riding for a bad fall, and you get scared.

Being scared is part of a scientist's life, because most experiments are expeditions into the unknown. Which scientist embarking on a risky experiment has not sensed that butterfly in the stomach? Michel Eyquem de Montaigne, too, must have known this sensation when he set out to do experiments – *essais* – on himself. His genius transformed these experiments into one of the great books of humankind. Montaigne was not a scientist in the modern sense, but everything in his *Essais* conveys the liberating breeze of the scientific spirit. He was the guiding star when I tried to assuage the nocturnal voices with the eighteen essays “Jeff's View”. And perhaps it was he again who now made me decide to move on to other things.

I thank Heimo Brunetti, Sabeeha Merchant, and Michael P. Murphy for their helpful comments.



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The Voice of the Night is a novel by American author Dean Koontz, released in 1980 under the pseudonym Brian Coffey. In the summer of 1980, introverted bookworm Colin Jacobs moves to Santa Leona, California with his mother, and soon meets and becomes friends with another boy his age. Roy Borden is everything Colin has never been, but secretly wishes he could be- brave, outgoing, muscular, athletically talented and a consummate ladies' man. He is an instinctive fighter, ready to stand up to anyone or LibriVox recording of *Voices Of The Night - And Other Poems* by Henry Wadsworth Longfellow. Read in English by Michele Fry Longfellow's first collection of early poems, published in 1895, with a short biography by the editor, a chronological list of his works, plus analysis and commentary on Longfellow's themes, style, and talent, by various authors. (Michele Fry) For further information, including links to online text, reader information, RSS feeds, CD cover or other formats (if available), please go to the LibriVox catalog page for this recording. For more free audio books or to be *Voices of the Night* book. Read 4 reviews from the world's largest community for readers. Many of the earliest books, particularly those dating back to th... His first major poetry collections were *Voices of the Night* (1839) and *Ballads and Other Poems* (1842). Longfellow retired from teaching in 1854 to focus on his writing, though he lived the remainder of his life in Cambridge, Massachusetts, in a former headquarters of George Washington. Longfellow predominantly wrote lyric poetry, known for its musicality, which often presented stories of mythology and legend.