

Strasbourg, le 6 Novembre 2003

Biocomplexity Faculty Search  
c/o Ms. Yana Teterina  
Department of Physics  
Indiana University  
Swain West 117  
727 East 3rd Street  
Bloomington, IN 47405-7105  
USA

**Objet : Letter of evaluation of Dr. Michael G. POIRIER**

**Didier Chatenay**  
Directeur

Affaire suivie par  
Didier CHATENAY  
Tél. : (33) 03 902 40 728  
chatenay@ldfc.u-strasbg.fr

To whom it may concern,

I have been in close contact with Dr. Poirier since I started collaborating with Prof. J. Marko at UIC a few years ago. During this collaboration I had the opportunity to visit Prof. Marko's laboratory several times and I met Michael during these visits just at the beginning of his PhD project.

During these visits we started together some experiments on the elastic properties of chromosomes; those experiments aimed at elucidating some aspects of mitotic chromosomes structure from elastic measurements. I have to say that from the beginning I really appreciated to work with Michael and this is for this reason that I asked him whether he would be interested coming to my laboratory for a post-doctoral period. I have been very lucky to get him interested in this offer and since now one year we work together in real close connection. This already tells you that I deeply appreciate the scientific qualities of Michael.

Since he arrived in Strasbourg, Michael is working on the measurements of expression level of various fluorescent proteins in bacteria. This project is motivated by the observation that even in a monoclonal bacterial population there are great dispersions in the phenotypic properties of individuals which are linked to various sources of noise during transcription and translation. He first started to build a set-up using fluorescence microscopy and microfluidics devices (that he fabricates himself using soft lithography techniques) aimed at quantifying the level of fluorescence of individual bacteria. His success in this part of the project was not a great surprise for me since I knew, from my visits at UIC, his qualities as an experimental physicist. But I should say that he really deeply impressed me when he started the development of the microfluidic devices, an area which was quite new for us and in which we had no expertise. The efficiency with which he was able to obtain devices in a quite short period of time was just simply amazing. But, in some way, this was the easiest part of the project; indeed to perform the experiments we needed various bacterial strains modified using

Institut de Physique  
3 rue de l'Université  
67000 Strasbourg  
Tél. : (33) 03 902 40 728  
Fax : (33) 03 902 40 745  
<http://www-ldfc.u-strasbg.fr>

molecular biology techniques with which he was not at all familiar. In this area we had a little bit more of expertise in the laboratory but we never used those techniques to such an extent. Apart from becoming familiar with bacterial physiology, the development of these molecular biology techniques was essential for the success of the planned experiments; amongst the techniques involved I would just cite cloning of various fluorescent proteins inside various plasmid vectors, the use of PCR, the use of recombinant strains of Escherichia Coli. For this part of the project, I would say that Michael really surprised me; he never approached before such techniques and he has been almost immediately successful. The only way he could be that successful was by working really hard; those experiments are simple in their principle but there are so many pitfalls that they require a complete involvement of the experimentalist in order to be successful. I should be honest by saying that we started this project before Michael's arrival but I have to say that since his arrival this project has taken a quite different and much more appealing aspect mainly because of Michael's involvement in the development of the various technical approaches needed. This is for the technical and experimental parts; I should also say that even in the more conceptual parts of the project, the input of Michael has been quite decisive in the sense that he deeply thought about the type of questions we could address and also about the type of systems which could be of interest to bring answers to these questions. Also he became interested in the more theoretical aspect of such a project about measurements of noise expression in bacteria; this motivated him to start collaborating with theoreticians in the laboratory (Dr. Simona Cocco, Dr. Remi Monnasson and Professor Ken Sekimoto). Having participated myself to these discussions with the theoreticians I can say that Michael perfectly masters this type of interactions.

As you can see I am deeply convinced that Michael has an excellent profile as an experimentalist; I am also convinced that he has an excellent taste about choosing and developing an experimental program which is probably one of the most important qualities to run his own laboratory in the future. On the more technical sides he now possesses a solid and quite complete background in various experimental areas which are of extreme importance for a physicist working in biological physics.

I have to say that if Michael had been interested to stay in France I would have more than seriously supported his application on a CNRS position. In my opinion he is at the level of 2 young scientists working in my laboratory (Dr. Laurent Bourdieu and Dr. Jean-François Léger) who have been recently recruited on a CNRS position. I also know some young scientists recently recruited in the USA and for me Michael has the equivalent potential (with perhaps a greater technical ability) of young scientists such as Dr. Philippe Cluzel (at University of Chicago), Dr. Deborah Fygenon (at UCSB) or

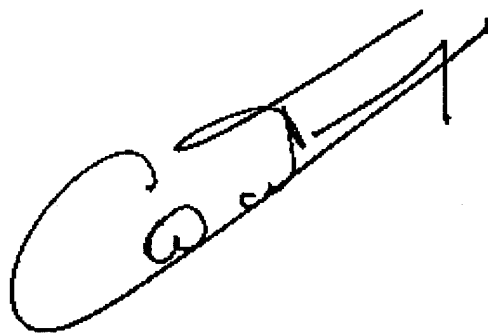
Dr. Michael Elowitz (at CalTech). He also compares quite well with young scientists I had the opportunity to meet in Israel such as Dr. Oleg Krychevsky (at the Ben Gurion University) or Dr. Michael Elbaum (at the Weizmann).

Finally I would like to stress another point about Michael; everybody in the laboratory (I really mean everybody, from technicians to students, permanent scientists) do appreciate the presence of Michael. I have been really impressed by the ease he was immediately considered as a colleague with whom it was quite easy to work by everybody. I am sure that the human qualities of Michael are an extraordinary advantage to develop multidisciplinary programs and projects; he is always attentive to the point of views of people even when they might be weird or quite far from his owns. He always tries to take the more positive parts of these differences and I can assure you that he became a central person of the laboratory not only because of his scientific abilities, which he uses to help people around him, but also because people know that it is always interesting to discuss with him.

I do believe that recruiting Michael is a great opportunity for any Department of Physics willing to develop interdisciplinary research at the interface between physics and biology. In particular I am sure that the enthusiasm of Michael for research and specially his abilities to develop new projects in close collaboration with students and other scientists from different fields is a guarantee for his future achievements.

I hope this letter will be of help in taking your decision and I am willing to stay at your entire disposal for any further information.

With my very best regards,

A handwritten signature in black ink, appearing to read 'Didier Chatenay', written diagonally across the page.

Didier CHATENAY, Directeur de Recherche C.N.R.S.