

MAX-PLANCK-INSTITUT FÜR MOLEKULARE GENETIK

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Biocomplexity Faculty Search Committee
C/o Prof. Rob de Ruyter van Steveninck
Department of Physics
Indiana University
Swain Hall West 117
Bloomington IN, 47405-7105
USA

Dear Professor de Ruyter, dear Search Committee Members,

I am writing on behalf of **Dr. Pavel Baranov**, who I understand has applied for a position in your Department.

I have known Dr. Baranov since 1995, when he began his Ph.D. studies at Moscow State University. My laboratory has had a long-standing collaboration (since 1990) with the groups of Professor Alexey Bogdanov and Professor Olga Dontsova in the Moscow University, which has been financed successively by NATO, the Volkswagen Foundation and the Deutsche Forschungsgemeinschaft. One of the principal features of our collaboration is that Ph.D. students from Moscow can come to Berlin for periods of several months to carry out experiments which for technical reasons (lack of facilities or equipment) would be difficult in Russia. Dr. Baranov made several such visits to Berlin in the framework of this programme between 1995 and 1998, and came again as a post-doctoral scientist from November 1998 until January 1999, just before he moved to the laboratory of Dr. John Atkins in Salt Lake City.

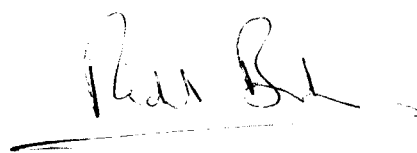
My research group has for many years been interested in the structure and function of bacterial ribosomal RNA, and much of our work in this context has been concerned with the development of cross-linking techniques, in close collaboration with the Moscow group. Dr. Baranov's Ph.D. project was to develop a method for introducing site-specific internal cross-links into ribosomal RNA, with a view to establishing new intra-RNA neighbourhoods within the 16S and 23S rRNA molecules. (At that time – 1995 – the elucidation of the ribosomal subunit structures by X-ray crystallography was still a futuristic dream!). Dr. Baranov used ribonuclease H together with complementary chimeric oligonucleotides to

introduce highly specific "nicks" at selected sites in the isolated rRNA, and a photoreactive nucleotide (4-thio-uridine 3', 5'-biphosphate) was then ligated into the nick site. Subsequently, the ribosomal subunits and 70S ribosomes were reconstituted with ribosomal proteins, and irradiated at 350 nm to induce the cross-linking reaction. Finally, the cross-linked subunits were dissected and the sites of cross-linking determined.

Dr. Baranov showed himself from the outset to be thoughtful, talented, industrious and independent scientist. His project was technically not an easy one, and there were many experimental problems to overcome. He was however never short of new and original ideas to combat these problems as they arose, and was able to bring the project to a successful conclusion; the results were published in papers in *RNA* and *Nucleic Acids Research*, with Dr. Baranov as first author. Concurrently with his experimental programme, Dr. Baranov compiled a Database of Ribosomal Cross-links, which was also published – together with a subsequent update – in *Nucleic Acids Research*. During his final visit here as a post-doc (1998-1999) Dr. Baranov worked with us on our computer modelling project to derive a first three-dimensional model of the 23S rRNA, and he also put together an elegant web site which combined the computer modelling and cross-linking studies.

On the personal side, Dr. Baranov has a quiet and engaging personality. He rapidly became assimilated into our research group and always had very good relations with his colleagues. In my opinion Dr. Baranov would be an asset to any research laboratory, and I recommend him to you without reservation.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Richard Brimacombe", written over a horizontal line.

Richard Brimacombe, MA, PhD (Cambridge, UK)