1 You became widely known because of IgNobel. How did this influence your work/career?

The news that I was chosen to receive the Ig Nobel divided my colleagues: some were either skeptical or worried that this may reflect negatively on my career, but greater minds like my colleague David Gross[1] and former advisor Bud Homsy[2] had no doubt that I should be proud of it. I think this is a great way to bring science to public and fill the knowledge gap between scientists and a wider audience. And, indeed, it did not hurt my career as this year I received the Presidential Early Career Award for Scientists and Engineers for my work in the Unites States. Ironically, when I met Obama in April, he said "*it is all Mr. Putin's fault …*" when apologizing for being late.

2 Angre Geim got IgNobel in 2000 and 10 years after he received Nobel. Do you have a similar ambition?

I do not do research for the sake of awards, as I do not chase the number of publications and citations, research dollars and other indirect measures often imposed by bureaucratically oriented systems. My ambition is to continue working on problems which I find both important and challenging.

3 What are you working on now?

At the moment, I split time between US and Canada and moved my teaching to Canada for the reasons which will be mentioned later.

Coincidentally, I am working on the project related to water landing on which there was a lot of fundamental work done in Russia. My interest is in filling the gap in understanding the small-scale and short-time singularities in this problem that occur at the moment of impact and close to the impacting body edges. Another project is on isothermal engines operating on the direct conversion of chemical energy to mechanical motion, which brings together many fields.

In general, I choose problems that have applications in mind, but also contain interesting not well-understood physics and thus require deeper fundamental insights.

5 What was a reason for you to leave Russia?

By the time I was finishing my studies at Phystech, the society in Russia was under the severe corrosion by overturned values and corruption, as the result of which education and science were deteriorating rapidly. Many talented young people were either leaving the country or taking jobs far from science to support their families. It was sad to see that it took no time to destroy a great system of education strongly coupled with the world leading research that needed decades to build! At the time, I did not see any prospects for the situation to be rectified as the country was just selling natural resources and not investing into education, science, and technology systematically – exceptions such as pouring money in a particular area (say, nanotech) is like

[1] Nobel Laurate in Physics
[2] Member of the National Academy of Engineering

trying to revive a fingernail in a dying body. So, as a non-Moscow resident, if I wanted to stay in science and support my single parent in Siberia, I had to move.

6 How difficult was it to start living and working abroad?

Before leaving Russia, I was fortunate to be a student of Igor Lipatov at Phystech, so on a professional level the first three years in the USA were a bit of a struggle to keep up the same level of academic work until I met Bud Homsy (University of California) and then the late Jerry Marsden (Caltech), working with whom enriched me as a scholar and as a person and helped me to build an independent research career. Having said that, the first three years were not a waste since I continued working on my PhD and then returned to Russia to defend it at Phystech.

On a personal level, adaptation was not difficult for a number of reasons. First, there was no need to deal with corruption on an everyday basis. Second, I met really good people from various cultures who became my friends for life. Third, I do not feel detached from Russian culture: for example, this summer I attended an outstanding exhibit by Vassily Nesterenko in Beijing and last Fall the world premiere "On the Edge" by Diana Vishneva in Segerstrom Hall, California, which left a long-lasting impression on me.

4 How would you compare your work experience in Russia, Canada, US?

Similar to the previous question, one cannot take work out of the personal context.

On a professional level: in Russia, at least at my time, the system is very direct–either you learned something or not, or either you solved problem or not; the US of course is a very simulating environment (which often imposes a business type of model of research, i.e. when the Principal Investigator runs research as a business by hiring people who do actual work); and in Canada, the academic system still allows one to conduct research in scholarly fashion.

On a personal level, I met great people in every country I lived in and got exposed to various cultural differences, which shape one's personality. In this context, and also at the time when certain myth is being created about Russia, one should recall Jorge Borges' words "*As I think of the many myths, there is one that is very harmful, and that is the myth of countries. I mean, why should I think of myself as being an Argentine, and not a Chilean, and not an Uruguayan. I don't know really.*" While I am proud of my Russian origin, I do not know why cannot I think of myself as also North American, European or Asian, for that matter, since I grew up on the East side of Ural mountains.

7 How do you see future of science and fluid dynamics, in particular?

The indirect measures mentioned above engender "champions" who would want to be shown in the best possible light. What is missing in this picture is the pure curiosity-driven research and vision that has been behind all great discoveries and inventions. On the bright side, I believe that nothing can kill natural curiosity.

Fluid dynamics is one of the oldest science fields, which stimulated the development of mathematical methods used nowadays throughout many other fields. But despite its maturity, it

still has many key questions unanswered. Because fluid is one of the basic states of matter, it is an essential part of our understanding of pretty much everything from the Universe to DNA testing. This requires continuing serious efforts in fundamental fluid dynamics research and thus training future researchers, which becomes somewhat challenging due to segregation of fluid dynamics either into Mathematics departments, where research is often abstract and/or far from physics, or into Engineering departments, where research is often conducted with commercial numerical codes. The only remedy I can see is to revive the old school values and systematically infuse rigor and uncompromised standards in the classroom, which would prevent the surprising exam results showing that ¾ of mechanical engineering juniors[3] are in favor of existence of a perpetuum mobile.

8 What do you consider your main achievement in fluid dynamics?

I think my main achievement is the capability to identify problems where, because of ingrained opinions, other people do not see any problem and basic premises have not been questioned. This is how I often pick up problems and, in this sense, I do not have favorites among the projects I worked on. Beyond fluid mechanics, I am proud of my joint work with Jerry Marsden on a unified theory of dissipation-induced instabilities presented in the same journal which publishes Nobel prize lectures.

[3] third year undergraduates in Santa Barbara