Glaucius Oliva

Master, Distinguished Governor, Pro-Vice-Masters, Graduates and Graduands, Guests, and Colleagues,

Today, it is my great pleasure to honour Professor Glaucius Oliva, President of the National Council for Scientific and Technological Development in Brazil, Director of Brazil's prestigious Science Without Borders programme, and Professor at the Institute of Physics of São Carlos, University of São Paulo.

Professor Oliva is also an alumnus of Birkbeck, where, in the mid-1980s, he completed a PhD in protein crystallography. Crystallography is a most beautiful and useful science. Poets tell us that it is the science that reveals the "pellucid structure/ winding through our bones" and "builds a lattice/ clean enough to clamber towards the moon" (this is Peter Meinke in the poem "The Crystallographer in Love", writing in the same year that Oliva was completing his PhD at Birkbeck).

Crystallography is one of the sciences that we at Birkbeck are particular proud of. When Oliva joined our Crystallography Department (now part of the Department of Biological Sciences in the School of Science), he was well aware of its formidable history. The founding father of crystallography at Birkbeck was J. D. Bernal, who pioneered the application of X-ray crystallography to determine protein structure, and who set up the Bio-molecular Research Laboratory at Birkbeck in 1948. It is also renowned for nurturing the talent of biophysicist and X-ray crystallographer Rosalind Franklin who, in the 1950s, made world-changing contributions to the understanding of the fine molecular structures of DNA, RNA, viruses, coal, and graphite.

Between 1984 and 1988, this was where Oliva chose to do his PhD, working with the formidable scientist Sir Tom Blundell. Colleagues remember Oliva as a relaxed and charming young scientist. While other PhD students baulked at the prospect of presenting their research in the departmental lecture room (EB16), Oliva seemed to revel in it. Oliva's distinguished mentors stoked his curiosity. Confident of his abilities, they set his mind on solving some of the big questions in protein crystallography – such as finding short cuts around the "phrase problem" by using protein models in rotation functions. To put it mildly, he thrived.

But Oliva is passionate about something else as well. Like J. D. Bernal who reached beyond the laboratory in order to intervene politically in the struggles against fascism and for peace, Oliva too seeks to improve the world through intervening in its institutions.

Once his PhD was achieved in 1988, he returned to Brazil, in order to transform science in his homeland. This was no mean ambition. For historical reasons, university research in Brazil was lagging seriously behind that of Europe. In colonial times, the Portuguese had prohibited the establishment of institutes of Higher Education, forcing Brazilian students to emigrate to Europe (especially at the University of Coimbra) if they were to achieve their ambitions. With the exception of some professional schools in law, medicine, and engineering, established in the nineteenth century, it was not until 1934 that the university in São Paulo was founded. The National Research Council was only established in 1951 and the Brazilian Association of Crystallography as late as 1972. While Oliva was doing his PhD at Birkbeck, a major study of science in Brazilian universities concluded that scientific careers in Brazil were insecure, scarce resources were dispersed, politicians intervened in intellectual matters, and the institutions were chronically under-funded. That this is no longer the case can be attributed to leaders like Oliva who were committed to returning to Brazil and making things happen. Nowadays, there are nearly 2,400 universities and colleges in Brazil, with 7.2 million undergraduates

and 200,000 graduate students. Between 2000 and 2013, Brazilian scientists published 14,400 publications in the field of crystallography alone.

Oliva has been at the heart of Brazilian innovation. As President of the National Council for Scientific and Technological Development, he oversees the promotion and quality of research. Enormous changes have taken place in Brazil as a result of the Council's investment in agriculture, oil and gas, and aerospace industries, in particular.

As Director of Brazil's Science Without Borders programme, he has ensured that Brazil invests in talented people, developing the skills and competitiveness necessary for its strong economy. In particular, he emphasises international mobility: sponsoring Brazilian researchers to participate in centres of excellence internationally (including at Birkbeck) and also giving talented researchers abroad the opportunity to collaborate with Brazilian scientists in their centres of excellence. As of February of this year, Brazil's Science Without Borders have awarded nearly 50,000 undergraduate fellowships, 8,500 part or full time PhD fellowships, over 4,000 post-doctoral fellowships outside of Brazil, and over 1,5000 for junior and senior scientists to come to Brazil. These figures do not include the many thousands of fellowships given through Science without Borders by the private sector. Ties between our college and Brazil are highly valued.

Oliva has also led large teams of researchers – including physicists, biologists, and chemists – working on the structure and function of biological macro-molecules and their application to the development of new drugs to treat disease. He has specialized in tropical infectious and parasitic diseases, which are of little interest to major pharmaceutical companies but are still a major global cause of illness, morbidity, long-term disability, and death for millions of people, especially for the poor, in the global south.

It is no exaggeration to say that Professor Oliva is the father of protein crystallography in South America as a whole. In 1997, he was instrumental in raising the money for the first protein crystallography beamline operational in the southern hemisphere. Unsurprisingly, his capacity for work is enviable. He is a member of the São Paulo State Academy of Science, the Brazilian Academy of Science, and has been awarded the Order of Scientific Merit by the Brazilian President.

But what about the man? He has led an intellectually exciting life – as when he conducted protein crystallization experiments aboard a NASA space shuttle. He is charismatic, a brilliant teamworker, and (I am told) capable of convincing anyone to do anything. As a PhD student here at Birkbeck, he was the "life and soul" of the department's communal tea time. These had taken place regularly at 10.15am and 3pm since Bernal's time. Oliva is unwavering in his support of Timão football club, or the Corinthians. He is also amusing…. But he can make mistakes. I am informed that when Princess Anne visited the Crystallography Department to see a newly acquired X-ray detector, he forgot to switch on the lamp. She pretended to be impressed by her first glimpse of a protein crystal, but in reality could only have seen darkness.

However, we don't honour Oliva today for his legendary hospitality (including Brazilian Bar-B-Q, Japanese "Squid with Potatoes", and Samba dancing).

Oliva is a global leader. We are immensely proud to be able to make Oliva a Fellow of Birkbeck. His ties with Birkbeck have always been strong, and we were particularly proud when he accepted to give the Bernal Lecture last year. Bernal himself would have been proud of Oliva's achievements. We are thrilled, therefore, to welcome Professor Glaucius Oliva as a Fellow of Birkbeck.