

Acceptance Speech by Professor  
**Stephen P. Jackson**  
2016 Co-Winner of the King Faisal International Prize  
For Science

38<sup>th</sup> KFIP Awards Ceremony  
Wednesday 23/03/2016 (14/06/1437H.)

Custodian of the Two Holy Mosques  
King Salman Bin Abdulaziz,  
Your Highnesses,  
Your Eminences,  
Your Excellencies,  
Distinguished Guests.

It is a great honour to be a co-recipient of the 2016 King Faisal International Prize for Science.

First, I thank the highly talented people who have worked in my laboratory, as it is their groundbreaking science that led me to receive this award. I also express my deepest gratitude to my hosts for their hospitality, and for making this week one of the most memorable of my lifetime.

The main goal of my research is to understand how cells in our bodies detect, signal the presence of and repair DNA damage. As is common in science, my career is based on a chance observation, my “eureka” moment. In 1993, I discovered that the most toxic forms of DNA damage, double-strand breaks, activate the enzyme DNA-dependent protein kinase. This laid the foundations for my work defining the system that repairs most double-strand breaks in all complex organisms, and also provided a paradigm for other DNA-damage detection and signaling systems that my group has studied.

Furthermore, my research revealed that it is possible to develop drugs to inhibit DNA repair, and that such drugs can selectively kill certain cancer cells. Indeed, through me founding a company, KuDOS Pharmaceuticals, several drugs were produced that are now in clinical evaluation. The most advanced of these, olaparib, established a new approach for treating cancer. By inhibiting the DNA-repair enzyme PARP, olaparib generates DNA damage that is well tolerated by normal cells but is very toxic to certain DNA-

repair defective cancer cells. Olaparib is an approved drug in 40 countries for ovarian cancers with so-called *BRCA* mutations, and is being evaluated for treating various other cancers.

It is humbling to recognize that my basic academic research has led to a drug that is enhancing the lives of cancer sufferers. My greatest wish now is that my future research will uncover further opportunities for improving human wellbeing.