

## Ian Frazer

### **2008 Balzan Prize for Preventive Medicine, including Vaccination**

*For his outstanding scientific achievement and lasting contribution to preventive medicine through his role in the development of a vaccine that promises to prevent virus-induced carcinoma of the cervix, which claims 250,000 lives every year.*

### **Immune Regulation and Therapeutic Immunisation**

**Diamantina Institute, University of Queensland, Brisbane**

*Adviser for the General Balzan Committee: Werner Stauffacher*

Ian Frazer is using the funds available from his 2008 Balzan Prize to support two fellowships. The two post-doctorate researchers, together with Ian Frazer's group at Queensland University in Brisbane, study immune system reactions to papillomavirus in order to produce a new generation of vaccines to cure existing infection. The two fellows work on individual projects in the frame of Frazer's program aimed at the development of a "therapeutic vaccine" against HPV-induced cervical cancer. They are given the opportunity to visit other labs in Australia and internationally as part of their research projects.

- After a worldwide search Frazer identified Dr. Antje Blumenthal from New York as recipient of a five-year fellowship funded from his Balzan Prize, and started working in Brisbane in March 2010. Blumenthal is a young postdoctoral researcher who works on a protein called Wnt and with Frazer she studies how this protein regulates immunotherapeutic T cells in skin.

- The other project involves Dr. Steven Mattarollo, a postdoctoral scientist at the Diamantina Institute, who will be funded for 2 years to work at the University of Melbourne with Professor Mark Smyth, an acknowledged world expert on the role of NKT cells in control of cancer cell growth. Thereafter he will return to work with Frazer at the Diamantina Institute to further develop his own research program.

### **Publications:**

- S. R. Mattarollo, A. Rahimpour, A. Choyce, D. I. Godfrey, G. R. Leggatt, and I. H. Frazer, *Invariant NKT cells in hyperplastic skin induce a local immune suppressive environment by IFN-gamma production*, "The Journal of Immunology", 184 (3), 2010, pp. 1242-1250,.

- S. R. Mattarollo, M. Yong, L. Tan, I. H. Frazer, and G. R. Leggatt, *Secretion of IFN-*

*gamma but not IL-17 by CD1d-restricted NKT cells enhances rejection of skin grafts expressing epithelial cell-derived antigen*, "The Journal of Immunology", 184 (10), 2010, pp. 5663 -5669.

**Statement by the Prizewinner:** *My research program on papillomavirus is now focussed on vaccines that can be used to cure existing infection with cancer causing viruses. Pleasingly, we have some positive signs from our clinical trials that these new generation vaccines may be of some therapeutic benefit. The specification of the Prize Foundation that the prize money should be used to benefit the career of an up and coming scientist ensures that the whole community will benefit from the award, though I feel a considerable responsibility to ensure that I provide a good opportunity and good mentorship for my selected protégée. I would hope to encourage a clinician scientist to work on further vaccines to help prevent more of the 20% of cancers that are attributable to infections.* Ian Frazer (Rome, 21.11.2008)