Fellow ISV Members: At the March, 2015 teleconference, the Executive Board reviewed and fully implemented the new Membership Policy. As a result, all new and renewing members have **FREE** membership for 2015 and all renewals will be due on January 1, 2016. So, tell all your friends and colleagues to join ISV and enjoy the benefits of membership. As the Co-Chairs of the Annual Vaccine and ISV Congress work diligently to prepare the Scientific Portion of the Congress, the ISV Development Subcommittee is engaging vaccine organizations to support ISV and the Congress activities. If you or your organization would like to support and sponsor activities associated with ISV, please contact Shan Lu or any ISV EB Member and discuss ways your organization can assist. The website for the 9th Annual Congress is where you can find the list of invited speakers and submit abstracts for consideration for talks or posters. Note that ISV members save $100 off the cost of Congress registration. We will be announcing new information and organization support in this column in future ISV Newsletters. Also, in a few months, the ISV Fellows Subcommittee will be announcing the process for nominating 2015 ISV Fellows. Be thinking about the person that you would like to nominate for an ISV Fellowship. A list of the previously inducted ISV Fellows can be found on the ISV website. Lastly, abstracts from the 8th Annual Vaccine and ISV Congress will be published in an upcoming issue of *Procedia in Vaccinology*, thanks to the efforts of Clarisa Palatnik de Sousa. - **Ted M. Ross, ISV Treasurer**

ISV is a 503c Non-Profit organization. If you have questions or comments please contact us by visiting our [website](#).
Vaccines in our Genes

It has taken 35 years to arrive at a point which I envisaged when I was working on the production of Foot-and-Mouth Disease (FMD) vaccines at the, then, Animal Virus Research Institute at Pirbright, U.K.. Just following the publication of the papers showing that genetic engineering was practicable, it becomes obvious that to genetically engineer a cow to systematically produce its own vaccine to FMD was on the cards. The open option was to produce 7 vaccines (one for each type of virus) from 7 antibody genes that had been introduced into the genome. Later this approach would be better defined by discovering a single gene that would produce a cross-protective (broadly neutralising) antibody that would neutralise all 7 virus types.

A publication in this area in 1996 (1) evidenced the practicability of immunoprophylaxis by genetic immunisation. Since then the method (CRISPR-Cas9) for inserting foreign genes into specific loci in the genome have been developed (2) and numerous targets for this technique have been assayed in animal models (mice and monkeys) with many successful immunisations. At the time of this writing the targeted human diseases are HIV, Malaria, Influenza, Ebola and Hepatitis where some safety testing in humans is under way. (Carl Zimmer: Redesigning the body to fend off disease. International New York Times, 10/03/15, page 1). Additionally the technique has been defined as “Immunoprophylaxis by Gene Transfer” (IGT). To fully develop the potential of this technique the genes to be transferred should code for antibody molecules that can cross-neutralise the neutralisation epitopes of all the disease causing organisms, their types and sThe problems with the application of this technique may not be in the area of successful immunizations but rather in the area of regulation and ethics. Various conventions have been promulgated that forbid the genetic transformation of the human genome. This has been relaxed in some cases (the single gene disease of Cystic Fibrosis) but the regulations do not allow a genetic transformation that might be incorporated into the germ cells and become part of the germ line of the individual. This regulation may also be relaxed for some hereditary diseases such as Huntington’s Chorea.

There are several other issues connected to IGT such as the effect of having a number of different antibody molecules secreted into the blood stream without any control mechanism preventing overproduction and self-reactions to the influx of the additional components of the phenotype. A second possible scenario is how might we respond to a mistake in a gene insert. If the new gene interacts with other elements in the genome with harmful consequences how would we deal with the person and then that person as a potential progenitor of other disadvantaged persons in the future?

IGT is a powerful tool. As with all tools they can be used to bring benefits and to cause harms. Our job is to examine what we can do with this new tool, proceeding carefully and cautiously - but proceeding nonetheless. To read more, visit our website!