

# From basic research and virology teaching to...

*...high impact public health research...*

New EU Member Countries are known for performing basic research, medical training and public health research in separate institutions. Romania's Stefan S Nicolau Institute of Virology (IVN) offers a different example. Founded as an Academy Institute in 1949 by Stefan S Nicolau, a Pasteur Institute pioneer in virology, the Institute conducts basic research, while delivering yearly virology courses to more than 800 medical students<sup>1</sup> and conducting strong public health research. In 1990, IVN reported the first iatrogenic AIDS outbreak in children in Romania<sup>2-4</sup>, which impacted AIDS research worldwide. IVN produced measles and influenza vaccines, and linked subacute sclerosing panencephalitis to measles virus infection. In 1996, a large urban epidemic of West Nile virus meningoencephalitis was reported by IVN laboratories<sup>5,6</sup>.

Professor Nicolae Cajal, Director, 1967-1992, defended basic research excellence and intellectual freedom, which provided the basis for Professor Costin Cernescu, Director, 1992-2005, to initiate strong programmes on arboviral infections, AIDS, viral hepatitis, respiratory viral diseases, antiviral therapy, cancer and neurodegenerative disorders.

With 29 scientists and a technical support of 60, IVN's focuses on: Emerging viral diseases; pediatric HIV infection; viral hepatitis; arboviral meningoencephalitis; and surveillance of pandemic influenza viruses. The programme, led by S Ruta, attracted significant international support; Antiviral/anticancer therapy. The programme led by CC Diaconu is establishing screening assays for



antivirals, multidrug resistance factors<sup>7</sup>, and cell therapy strategies (M Chivu);

Viral oncogenesis. The programme led by G Anton studies viral oncogenesis/oncolysis, and develops chimeric proteins as candidate vaccines;

Mathematical models of viral transmission (CN Zaharia).

With Baylor College of Medicine Houston, Texas, IVN collaborates on pediatric AIDS (with funding from NIH and Fogarty Center); with CDC and US Army Medical Institute, Ft Detrick, USA studies are pursued on West Nile virus infections; while with the Ludwig Institute in Brussels and with the Life and Brain Center, Bonn, IVN collaborates on genetics. A long-standing collaboration with Professor Laurentiu Popescu, University of Medicine and Pharmacy, Bucharest,

brings expertise in pathology and ultrastructure. With the Fundeni Clinical Institute (Professor Irinel Popescu), IVN collaborates on transplant and cellular therapy; and with the Obregia Psychiatric Hospital (Professor Maria Grigoriou-Serbanescu), IVN investigates genetics of psychiatric diseases.

IVN received several national and international grants and is modernising a 600m<sup>2</sup> area in order to seed junior tenure-track groups via international competition, and to establish incubator space for collaborations with biotechnology /pharmaceutical companies.

#### References

- <sup>1</sup> The Chair of Virology of the Davila University of Medicine and Pharmacy has been hosted by the Stefan S Nicolau Institute of Virology since 1949.
- <sup>2</sup> Lancet 17<sup>th</sup> March 1990; 335(8690):672.
- <sup>3</sup> J Infect Dis. Oct 1994; 170(4):1043-4.
- <sup>4</sup> J Med Virol. 2005; 77(2):159-163.
- <sup>5</sup> Lancet. 5<sup>th</sup> September 1998; 352(9130):767-71.
- <sup>6</sup> J Infect Dis. February 2000; 181(2):710-2.
- <sup>7</sup> Internat. J. of Quantum Chem. 2006; 106 (6), pp. 1457-1464.

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