

**SYMPOSIUM**

**February 10 -11, 1995**

**Fairchild Auditorium**

**STANFORD UNIVERSITY  
SCHOOL OF MEDICINE**

# **The Herzenberg Laboratory 1959...**

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## **Biographical Sketches**

**Collected  
for**

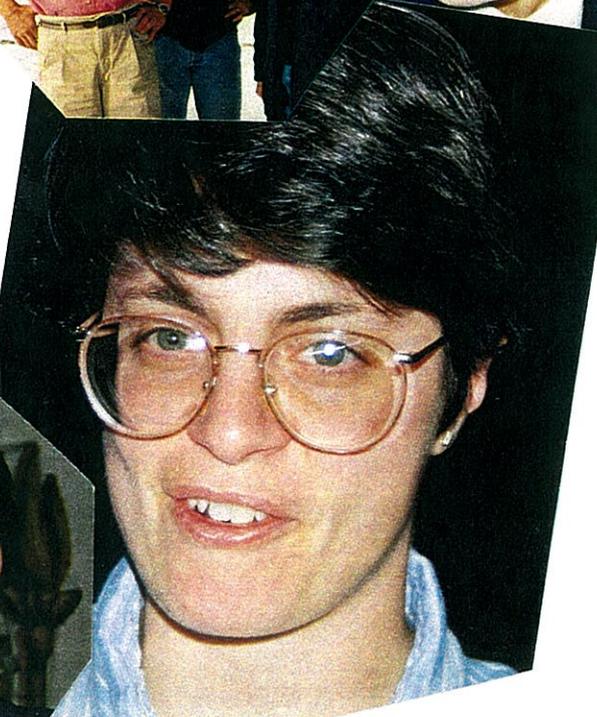
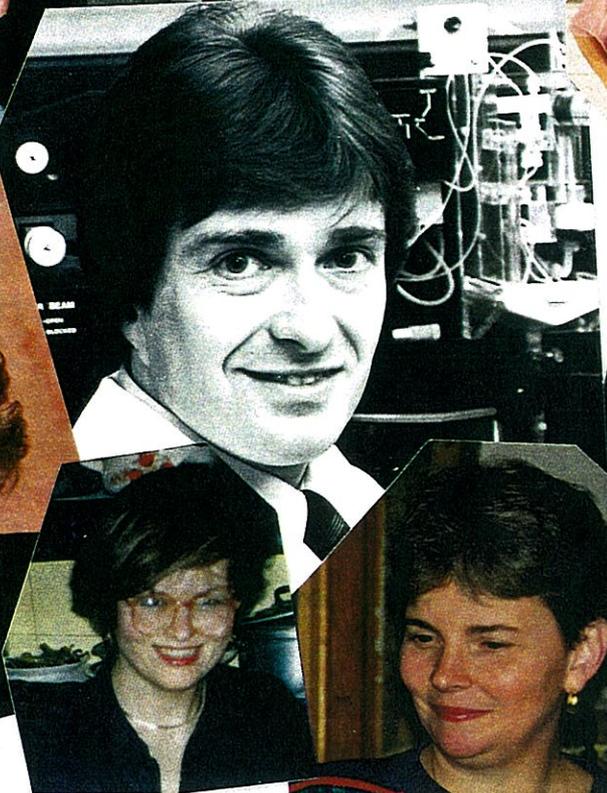
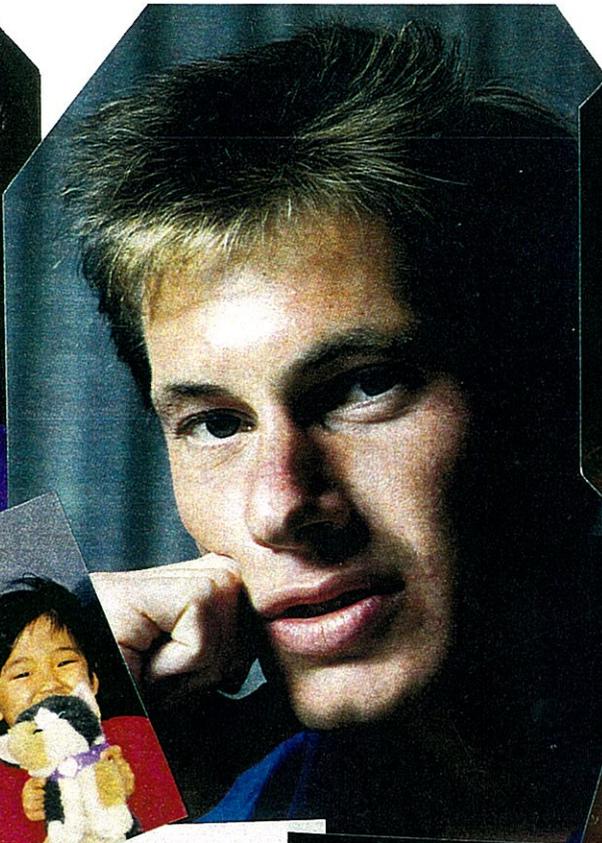
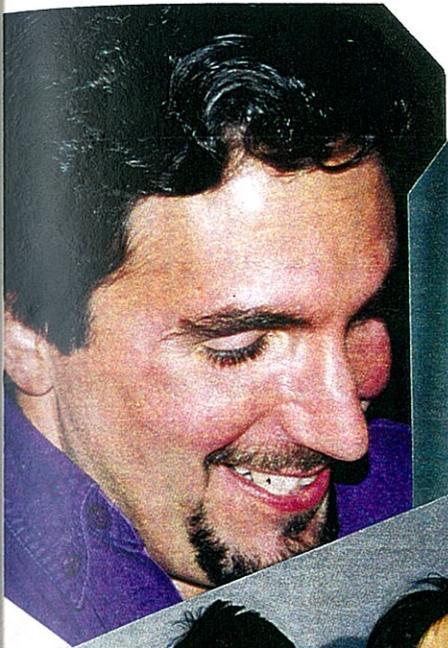
## **Frontiers in Immunology '95**

**A symposium in honor of Leonore A. Herzenberg  
on the occasion of her 60th birthday**

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**Stanford, California**

**Feb. 9-13, 1995**



**Coordinates**

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**Research Interests**

**Personal History.** The incentive for the study of Immunology: Kampo Medicine My interest in the biology of the human body began when I got appendicitis and was cured by burning (Chinese medicine). So, my greatest motivation to enter medical school was to study Chinese medicine, which has a history of existence for more than 2,000 years in China and was imported to Japan 1,300 years ago. Since then, it has been developed uniquely in Japan and is known as Kampo Medicine. During the last decade, Kampo Medicine has become more popular in Japan because doctors of western allopathic medicine have found that it is more effective in treating certain diseases when used properly and has fewer side effects. Although it is known to be effective empirically through a non-organ-specific balance of homeostasis, the mechanism of how it works is yet to be shown through basic research

To better understand Kampo Medicine, I realized that the study of endocrinology and immunology are very important. For this reason, I specialized in endocrinology after receiving my MD.. from Keio University and studied the pathogenesis of insulin dependent diabetes mellitus (IDDM).

**Thesis work.** IDDM is an immunological disorder. I began my study of the pathogenesis of IDDM using a non-obese diabetic (NOD) mouse model in 1988. Since I was interested in the abnormalities of the thymus of the NOD mouse, I moved to Tokai University and started to study immunology under the direction of Professor Sonoko Habu. My thesis work for my Ph. D. was on the lymphoid follicle of B lymphocytes in the thymus of the NOD mouse. In the thymus of this mouse, abnormal lymphoid follicles of B cells are observed. Lymphoid follicles start to show up at 8 weeks, around the period when pancreatitis starts, and grow until the mouse gets diabetes I studied the relationship between the pancreatitis, diabetes and lymphoid follicles. That was my first work in the field of immunology. All other works had been published in medical journals. The Herzenberg lab I came to join the Herzenberg lab at the end of 1991 upon Ko and Sonoko's recommendation to study the famous CD5 B cells. My project at the Herzenberg lab was to study the development of CD5 B cells. When anti-IgM antibody is administered into a neonate mouse, both conventional B lymphocytes (IgM<sup>lo</sup> IgD<sup>hi</sup>) and CD5 B lymphocytes (IgM<sup>hi</sup> IgD<sup>lo</sup>) vanish. I injected antibodies against IgM a- and/or b-allotype to a-allotype or b-allotype mice and observed the return of the subpopulations of B lymphocytes. The detailed story will be published soon. I learned a lot from the Herzenberg lab. My learning was facilitated by a well-organized lab, with data available from even 20 years ago, and an extensive computer system. When I joined the Herzenberg lab, the main stream of the lab was the study of redox regulation and HIV. Because I am an MD, I also found the treatment of HIV interesting. I knew there were Kampo drugs suitable to the treatment of HIV, however, a mechanism was unclear. I soon thought that the action of anti-oxidants might help explain the mechanism, because several Kampo drugs, including those for HIV treatment, were known to be strong anti-oxidants.

**Redox regulation and Kampo Medicine.** I moved to SRI in November, 1993 and started to study the effect of Kampo drugs and some component compounds on HIV-LTR gene expression. The results, which showed that some of the compounds inhibit HIV LTR gene expression, were presented in a symposium at the 10th International Conference on AIDS. In addition, I also study the regulation of other anti-oxidants on HIV gene expression. These results were presented at the meeting of the American Society of Cell Biology and will be presented in the Keystone Symposium in March.

**Future Plan.** Half of my career has been dedicated to preparing for my final goal: the study of the mechanism of action of Kampo Medicine. For that purpose, I finished my residency and fellowship in allopathic medicine in Japan and studied endocrinology, immunology and molecular biology. I am prepared now to take the next step of devoting the rest of my career to increase the understanding of Kampo Medicine, both in clinical and research environments. Thanks to the various labs I have been in, including the Herzenberg lab, I have found my life work: redox regulation by Kampo medicine. There are a lot of Kampo drugs which are effective for cancer, UV damage, hepatitis and so on. I hope to spotlight the understanding of the mechanisms of how they work. The Kitasato Institute in Japan, which I will return to in May of this year, is the leading institute of Kampo medicine in Japan and one of the few institutes in the world with both clinical and research facilities in the area of Chinese medicine. I will be involved with both clinical and non-clinical studies there. I am very excited to take on my next step.

**Personal Data**

My wife, Noriko, and my daughter, Ayano, and I will be returning to Japan in the near future.

**Key References**

- Watanabe, K., I. Takei, T. Maruyama, T. Kasatani, T. Yanagawa, Y. Shinkai, K. Okumura, S. Habu, K. Kataoka. 1990. Abstract: Presence of perforin-bearing lymphocytes in pancreas of NOD mice. *J. Japan Diabetes Soc.* 33 (Suppl).
- Maruyama, T., K. Watanabe, T. Yanagawa, T. Kasatani, K. Kataoka, T. Saruta. 1990. Abstract: The role of nK cells in streptozotocin induced diabetes mellitus. *J. Japan Diabetes Soc.* 33 (Suppl).
- Kasuga, A., T. Yanagawa, H. Wainai, H. Itoh, K. Watanabe, T. Kasatani, Y. Kawai, T. Maruyama, I. Takei, K. Kataoka, T. Saruta. 1990. Abstract: Lymphocyte subsets in young non-obese NIDDM patients. *J. Japan Diabetes Soc.* 33 (Suppl).
- Shimada, A., T. Maruyama, I. Takei, Y. Asaba, T. Takahashi, H. Itoh, K. Watanabe, T. Tadakuma, K. Kataoka. 1990. Abstract: Morphological changes in the exocrine and endocrine systems of the pancreas in IDDM model mice. *J. Japan Diabetes Soc.* 33 (Suppl).
- Kantor, Aaron B., Alan M. Stall, Sharon Adams, Kenji Watanabe and Leonore A. Herzenberg. 1995. *De novo* development and self-replenishment of B cells. *Intl. Immunology*, 7, in press.