

## BIOGRAPHICAL SKETCH

Give the following information for all new key personnel, consultants, and collaborators.  
Copy this page for each person.

NAME	POSITION TITLE
Benvenuto Pernis	Professor of Microbiology

EDUCATION (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)

INSTITUTION AND LOCATION	DEGREE	YEAR CONFERRED	FIELD OF STUDY
University of Milan	M.D.	1947	Immunology

RESEARCH AND/OR PROFESSIONAL EXPERIENCE: Concluding with present position, list in chronological order previous employment, experience, and honors. Key personnel include the principal investigator and any other individuals who participate in the scientific development or execution of the project. Key personnel typically will include all individuals with doctoral or other professional degrees, but in some projects will include individuals at the masters or baccalaureate level provided they contribute in a substantive way to the scientific development or execution of the project. Include present membership on any Federal Government public advisory committees. list, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. DO NOT EXCEED TWO PAGES.

### POSITIONS

1947-1951	Assistant Professor of Medicine, University of Cagliari, Italy
1952	Guest Assistant Professor of Medicine, Medical University Clinic, Zurich, Switzerland
1953-1965	Assistant Professor of Medicine, University of Milan, Italy
1963-1967	Director of Instruction in Immunology, Milan University Medical School
1965-1972	Full Professor of Medicine and Director, University Clinic, University of Genoa Medical School, Italy
1972-1976	Permanent Member, Basel Institute for Immunology, Switzerland
1976-	Professor of Microbiology and Medicine, College of Physicians and Surgeons, Columbia University, New York

### HONORS

1976	Elected to Honorary Membership, American Association of Immunologists
1975	Elected to European Molecular Biology Organization (EMBO)
1962-1983	Expert for Immunology, World Health Organization
1986	MERIT AWARD, National Institutes of Health

### PANELS AND COMMITTEES

1979-1983	NIH NAID Allergy and Clinical Immunology Advisory Committee
1980-1984	American Cancer Society, Immunology Panel, Chairman
1984 -	Cancer Research Institute, Associate Director
1982	Member - Irma T. Hirsch Award Advisory
1984-1985	Chairman - Horwitz Prize Committee
1987-1988	Member Columbia University Senate

### PUBLICATIONS: FOR THE PAST 8 YEARS FROM A TOTAL OF 261 PUBLICATIONS

- Tse, D.B., Cantor, C.R., McDowell, J. and Pernis, B. "Recycling Class I MHC Antigens: Dynamics of Internalization, Acidification and Ligand-Degradation in Murine T Lymphoblasts." *J. Mol. Cell Immunol.* 2:315-329, 1986.
- Tse, D.B., Al-Haideri, M., Pernis, B., Cantor, C.R. and Wang, Chang, Y.W. "Intracellular accumulation of T-cell receptor complex molecules in a human cell line." *Science*, 234:748-751, 1986.
- Bonagura, V.R., Mendez, L., Agostino, N. and Pernis, B. "Monomeric (7S) IgM found in the serum of rheumatoid arthritis patients share idiotypes with pentameric (19S) monoclonal rheumatoid factors." *J. Clin. Invest.* 1987.
- Suciu-Foca, N., Cai, J., Gutierrez, C., Reed, E., Morrison, S., Pernis, B. and King, D.W. "New differentiation antigens associated with the growth and maturation of lymphocytes." *J. Immunol.* 140:395-403, 1988.