Curriculum Vitae. A. Roberto Frisancho, B.H. M.A., Ph.D.

•Emeritus of Arthur F. Thurnau Professor of Anthropology,
•Emeritus Research Professor of the Center for Human Growth and Development,
University of Michigan,
Ann Arbor, Michigan, U.S.A.
•Honorary Professor of the National University of San Antonio Abad of Cusco, Perú.
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I, PERSONAL DETAIS

Citizenship : U.S. A.
Ethnic Group: Hispanic Peruvian.

Place Of Birth: André Roberto Frisancho was born February 4, 1939 in Cusco-Perú.

II. EDUCATION

1969 Ph.D. (Biological Anthropology)
Pennsylvania State University, University Park, PA
1966 M. A. (Anthropology)
Pennsylvania State University, University Park, PA
1962 B.H. Humanities National University of San Antonio Abad of Cusco, Perú.
1960 Certified Tuor Guide in Englis, French and Spanish, awarded by the "Corporación de Reconstrución y Fomento" Cusco, Perú;
1958 Graduated from "Colegio Nacional de Ciancias" of Cusco -Perú.

III. AWARDS AND HONOURS

Awards and/or Honora bestowed by the University of Michigan

•2000. Arthur F. Thurnau Professor of Anthropology.
•1998.Excellence in Education.
•1997.Amoco Distinguished Faculty Achievement.
•1997.Excellence in Education.
•1996.Excellence in Education.
•1994.Excellence in Education.

International Awards.

•2013.*Charles R. Darwin Lifetime Achievement Award* bestowed by the American Association **of** Physical Anthropologists.

•2011.Premio Nacional de Nutrición" awarded by the "Sociedad Peruana de Nutrición" Lima-Perú.

•2008.Franz Boaz Distinguish Achievement Award bestowed by the American Association of Human Biology.

•2008.Honorary Professor of the National University of San Antonio Abad of Cusco, Perú.

•1989-1990.President of the American Human Biology Association.

IV. ACADEMIC SERVICE.

•Founder of the American Journal of Human Biology, 1990.

•Chair and member of several academic committees of the University of Michigan,

V. WORK WITH GRADUATE AND UNDERGRADUATE STUDENTS

*I was adviser and co-adviser of more than 20 PhD Dissertations of Graduate students in biological anthropology**,** kinesiology, and epidemiology**.**

*** I was** mentor and adviser to hundreds of undergraduate students in biological anthropology.

VI. RESEARCH ACTIVITY

Throughout my academic career, I have pursued both basic and applied research in biological anthropology. In this context, I have written several books aimed at defining the principles for studying the process of human adaptation to environmental stresses such as extreme heat and cold, high-altitude hypoxia, high and low solar radiation, under nutrition, and overnutrition. In addition, I authored two monographs that provide anthropometric references for the evaluation of growth and nutritional status of children and adults. Alongside these endeavors, I have conducted research focused on determining the adaptive processes to different environmental conditions that occur during growth and development, and their impact on the physiological and morphological variability of adults. Specifically, the following research topics were addressed.

(A). **Origin of the high functional adaptation to high altitude hypoxia of the high-altitude Andean native.** To investigate this issue, I, alongside colleagues from Perú and Bolivia, evaluated the cardiovascular function, lung volumes, and aerobic capacity of Andean natives, in addition to European low-altitude natives living in Cusco, Perú, and La Paz, Bolivia, who migrated during either childhood or adulthood. Our findings indicate that the high functional adaptation of Andean

high-altitude natives to hypoxia is, to a significant extent, the result of physiological adaptation processes that occur during childhood development.

(B). Competition between maternal growth and fetal growth. Anthropometric evaluations at the Maternity Hospital of Lima, Peru, demonstrate that low birth weight in infants of adolescent mothers stems from nutritional competition between the fetus and the still-growing mother. Because the teenage mother is still developing, her body prioritizes its own nutrient needs, restricting adequate nutrients for fetal growth.This inference has been confirmed by several studies conducted in the USA;

(C) Influence of ecological factors on the morphological traits of two Quechua-speaking populations living at high and low altitudes.
According to Spanish chronicles, approximately 500 years ago (c. 1424–1440), following their defeat by the Inca Empire, some of the Quechua-speaking populations identified as "Chancas" migrated from the high-altitude Andean regions (such as Junín, Ayacucho, and Apurímac) to the upper lowlands of the Amazon region of Perú. A portion of them settled in the town of Lamas, located at an altitude of approximately 840 meters (2,760 ft) above sea level in the Department of San Martin. We conducted an anthropological study and the results indicate that while the Quechua-speaking people of Lamas share the same frequency of ABO and Rh blood types as the highland Chanca Quechua-speaking population from Ondores in the Department of Junín, situated at 4,100 meters (13,448 ft), but they have relatively longer legs and smaller thoracic dimensions. These findings suggest that the anthropometric differences between these populations are the result of the influence of the ecological settings to which each population adapted.

(D). Genetic origin of the high frequency of arterial hypertension in African American Black populations. Research conducted in the United States has suggested that the high prevalence **of** hypertension of African Americans is linked to genetic factors associated with high sodium retention, which may have evolved as a biproduct of the high sweat loss under heat stress in Africa This inference was confirmed by a study we did among the Afro-Bolivian population of "Chicaloma".

(E)**. Childhood chronic undernutrition and risk of adult obesity .** e
Several studies of undernourished populations report that growth stunting in childhood is associated with greater accumulation of body fat later in life. Ah statistical analysis we did of Mexican-Americans, Whites, and African-American Blacks that participated in the third National Health and Nutrition Survey

(NHANES III) of the United States indicated that a relative shorter leg lengths are associated with increased skinfold thicknesses. Since a relatively shorter leg length reflects the consequence of negative environmental conditions during development. These findings suggests that exposure to undernutrition during childhood may lead to compensatory physiological adjustments that promote fat storage and perhaps obesity during adulthood, This inference is supported by research in experimental studies in animals.

(F). Anthropometric standards for body size and composition \.

My applied research has focussed on developing anthropometric standards for body size and composition to improve public health. Recognizing the lack of standards based on large, representative samples across the entire life cycle, I utilized datasets from the U.S. National Health and Nutrition Examination Survey (NHANES) to establish new benchmarks. These standards have been published in two monographs and several articles. Today, these standards are used globally to evaluate growth and nutritional status in both children and adults.

VII. PUBLICATIONS

Topical Books

1. Frisancho AR. 1993. Human Adaptation and Accommodation to Environmental Stress. Ann Arbor, MI: University of Michigan Press.
2. Frisancho AR. 1982. Human adaptation: A functional interpretation. 2nd Ed. Ann Arbor, Michigan: University of Michigan Press.
3. Frisancho AR. 1979. Human Adaptation. St. Louis, Missouri: C.V. Mosby Inc.
4. Frisancho AR. 2006. Humankind Evolving. Exploration on the Origins of Human Diversity. Dubuque, IA: Kendall/Hunt Publishing Co.

Monographs

5. Frisancho AR. 1990. Anthropometric Standards for the Evaluation of Growth and Nutritional Status. Ann Arbor, MI: University of Michigan Press.
6. Frisancho AR.2009. Anthropometric Standards. An Interactive Nutritional Reference of Body Sizeand Body Composition for Children and Adults. Second Edition. Ann Arbor, MI: University of Michigan Press.

Articles, about 150 publications focused on determining the adaptive processes to different environmental conditions that occur during growth and development, and their impact on the physiological and morphological variability of adults.