mangrove.org®

PO Box 510312, Melbourne Beach, FL 32951

Principal Bios

Dr. Gordon H. Sato

Dr. Sato was born on 17 December 1927 in Los Angeles, California, the son of an "Isei" (Japanese-born immigrant) father and a "Nisei" (2nd generation or American-born Japanese) mother. His father taught him the generic techniques of gardening and how to cultivate things under a wide variety of conditions. He graduated from Manzanar High School, Manzanar, CA in 1944. He attended Central College, Pella, Iowa for a year before enlisting in the US Army. Supported by the GI bill, he was trained as an undergraduate in biochemistry at the University of Southern California and obtained a Ph.D. degree at the California Institute of Technology in Biophysics in 1955 under Nobel Prize winner Max Delbrück.

After post-doctoral training with Gunther Stent at the University of California-Berkeley and Theodore Puck in Genetics at the University of Colorado Medical School, he was a professor of Biochemistry at Brandeis University, Boston, MA from 1958-1969. Dr. Sato joined the Department of Biology at University of California-San Diego where he was professor from 1970 through 1983. He was director of the W. Alton Jones Cell Science Center, Lake Placid, NY from 1983 to 1992.

As a member of the National Academy of Sciences and an Adjunct and Honorary Professor at many universities throughout the world, Dr. Sato has authored or co-authored over 150 publications in cell and molecular biology. Dr. Sato is best known for his contribution to the understanding of the multiple factors required for the culture and husbandry of mammalian cells outside the body.

Dr. Sato has been instrumental in founding multiple biotechnology ventures including Collaborative Research, Inc. and Hana Biologics. With Dr. W.L. McKeehan, his Assistant Director at the W. Alton Jones Cell Science Center, Dr. Sato co-founded Upstate Biotechnology, Inc.(UBI). He has trained a long list of students in Cell and Molecular Biology and more recently in aquaculture and silvaculture.

The Manzanar Mangrove Initiative, with the objective to create whole new forests of mangrove trees in vast areas of the world where mangrove trees do not grow, was started by Dr. Sato. This project has the objective to alleviate poverty in coastal areas of the world by creating a renewable resource - mangrove trees, which produce valuable timber, and enrich the fish populations of adjacent seas. The Manzanar Project is named after a relocation camp in central California where Dr. Sato was interned during the Second World War and first began thinking of producing food in the desert. His groundbreaking work on the Manzanar Initiative was published in the journal Wetlands:

> “A Novel Approach To Growing Mangroves On The Coastal Mud Flats Of Eritrea With The Potential For Relieving Regional Poverty And Hunger”, Gordon Sato, Robert Riley, et al. Wetlands, The Society of Wetland Scientists, Volume 25: 776–779, September 2005.

Dr. Sato is currently working full time on a Mauritanian (West Africa) hunger and poverty project, similar in scope to the Manzanar project. Dr. Sato’s duties include the broad based project planning and establishing the international relations needed for project implementation.

In 2002, Dr. Sato was named a recipient of the Rolex Award for Enterprise and the 2005 Blue Planet Award and he is the subject of The Mangrove Man distributed on DVD internationally as well as programs aired on the topic in Japan.

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Robert W. Riley, Jr.

Graduating with an MA in Economics from the University of Central Florida, Orlando, where he worked as a graduate research and teaching assistant, Mr. Riley began his career as a Program Manager for communications systems manufacturer Harris Corporation, Melbourne, Florida. Motivated as an entrepreneur, Mr. Riley helped found and was a principal in several technology startups in the late 1990's.

In the mid 1990's, Mr. Riley worked in a consulting capacity for NASA at the Kennedy Space Center in Cape Canaveral, Florida, on an initiative to adapt Internet based technologies to STS Shuttle processing. During this period, he began research in mangrove ecosystems and into the failure modes that ubiquitously characterized mangrove restoration projects. He ultimately developed Riley Encased Methodology® (REM) for the successful long-term establishment of mangroves in non-native environments. The findings of his research have been published in peer-review journals, which include the research that challenged commonly held conventions in accepted practices and limits of mangrove restoration:

> "Riley encased methodology: principles and processes of mangrove habitat creation and restoration", Robert W. Riley, Jr & Chandra Salgado Kent, Mangroves and Salt Marshes 3: 207-213, Kluwer Academic Publishers, December 1999.

Applications of his methodologies in Afforestation have also been successfully applied in humanitarian efforts to establish economic base where indigenous coastal populations are in poverty and suffer due to a lack of natural resources. This groundbreaking development is now a model for sustainable economic development targeted at impoverished regions of the world:

> "A Novel Approach To Growing Mangroves On The Coastal Mud Flats Of Eritrea With The Potential For Relieving Regional Poverty And Hunger", Gordon Sato, Robert Riley, et al. Wetlands, The Society of Wetland Scientists, Volume 25: 776–779, September 2005.

Subsequent research guided Mr. Riley in patenting REM methods and technology. These innovative methods for planting mangroves enable the reliable and long-term establishment of reproductively mature, self-sustaining mangroves and mangrove forests. Applications include high-energy shorelines, seawalls, revetments, bulkheads and non-native environments. The technology has particular applicability in areas destroyed or degraded, or where topography and hydrology has been artificially changed, such that physical conditions are no longer favorable for natural mangrove recruitment.

The environmental TV program Geoambiente produced a half-hour show featuring the application of REM® in the ecological restoration project at Cabo Rojo, Puerto Rico.

In 1996, Mr. Riley established *mangrove.org*® with a mission to conduct research and development, promote education and implement REM technology in mangrove afforestation, habitat creation and restoration, shoreline stabilization and erosion control applications. The technology has been successfully applied in water quality improvement, pollution control, coastal resilience and sustainable development projects.

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Robert H. Ranson, Jr.

Following graduation with a BS in Soil Science from NC State University, Raleigh, North Carolina Mr. Ranson began his career with the Natural Resources Conservation Service, an agency of the United States Department of Agriculture. For over 34 years he worked on the National Cooperative Soil Survey Program, personally mapping over one million acres as a field Soil Scientist and GIS specialist. Soil scientists across most of the world use a system of soil classification based on Keys to Soil Taxonomy. This system allows soil scientists to classify a soil by observing and measuring physical and chemical properties in both the field and laboratory. These properties include: soil color, particle size texture, pH, depth to rock, organic matter content, seasonal wetness, flooding, landform type, climate, and type/origin of parent materials. Soil mapping requires extensive knowledge of ecosystems. Experienced soil scientists find a very strong correlation between ecosystems and specific soil series.

Mr. Ranson's career made him an expert in the Atlantic Coastal Plains and Tidewater, the Southeastern Piedmont, and the Appalachian Mountain Regions of the United States. He is a licensed professional Soil Scientist and has certification in wetland determinations and delineations. His areas of expertise are Soil Classification, Soil Characterization Sampling, Particle Size Analysis, Rock and Mineral Identification, Ecology, and Remote Sensing via Aerial Photo Interpretation. He is proficient in modern GIS technology including ArcGIS, GPS and converting soil survey maps into modern digital GIS layers.

Mr. Ranson's currently spends a substantial portion of his time on the Central Pacific coast of Costa Rica where he is conducting research on the influence of soils in the health and physical characteristics of mangroves within the extensive estuary system. Essential portions of his work are related to shoreline stabilization and erosion control for application in the restoration of local fish and wildlife habitat. Mr. Ranson manages the *mangrove.org*® reforestation and education programs in cooperation with the Ministry of Environment, Energy and Technology of Costa Rica (MINAET).
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Publications and Presentations:

During his career Mr. Ranson helped to identify and establish over 20 new soil series. This is the equivalent of a biologist finding and classifying a new species.

Mr. Ranson contributed to the following published county soil surveys in North Carolina:
Harnett, Currituck, Chowan, Perquimans, Bertie, Tyrell, McDowell, Mitchell, Yancey, Franklin, Halifax, Anson, Chatham, and Iredell, as-well-as the soil survey of Aberdeen Proving Ground in Maryland.

"Native Fertility of Forested Mountain Soils" - Soil Science Society of NC 1988 Annual Meeting

"Soil Survey Techniques on Firing Ranges with UXO" - Soil Science Society of America 1998 and Soil Science Society of NC in 1999.

Memberships:

- Soil Science Society of North Carolina
- Soil and Water Conservation Society
- Society of Wetland Scientist