

COLORADO

CAFÉ SCIENTIFIQUE

TUESDAY 20 OCTOBER 2009

at the **Wynkoop Brewing Company**

<http://www.wynkoop.com/>

Corner of 18th and Wynkoop in LoDo, Denver

About a block from Light Rail. Thirteen minutes by foot from Auraria.

Mapping the Origin and Evolution of Life

Norm Pace, PhD, Distinguished Professor, Molecular, Cellular, and Developmental Biology, University of Colorado, Boulder

When sequencing of RNA and DNA became possible, organisms could be grouped on the basis of their genetic relatedness, regardless of appearance. And the surprises began. We animals are eukaryotes (domain *eucarya*), and so are plants; we have a membrane around our cell's nucleus. All the rest of life was thought to be prokaryotes, primitive bacterial species from which we must have evolved. But then it was shown, by sequencing certain RNAs from organisms as diverse as humans, plants, fungi, bacteria, and microbes from hot springs and sea-floor vents, that life did not consist of just prokaryotes and eukaryotes, as had been taught for decades. In fact the concept "prokaryote" which implies a primitive precursor of us sophisticated eukaryotes is wrong; and Norm Pace has been the leading proponent for changing the way we think about the millions of species we share the world with. Fundamentally, there are three phylogenetic kinds of organisms, representative of the three primary domains of life: **bacteria**, **archaea**, and **eucarya**. Moreover, none of those primary domains is derived from another, but they all have a single common origin. Norm Pace and his group at CU are now examining the microbial diversity of the human environment.

Yuck, your shower at home is a...a...a Petri dish! Is it still safe to bathe?

EVERYONE IS WELCOME. The discussion starts at **6:30 in the Mercantile Room (no food service there)**. Come before **6 PM** to leave yourself time to get something to eat, or stay and eat afterwards. We end around **8 PM**.

There's no charge. The Wynkoop is generously providing the facility; we buy our own drinks. It is first come, first seated, and **seating is limited** so that everyone can take part in the discussion.

The Colorado Café Scientifique is organized by an informal group of faculty from CU and institutions up and down the Front Range, as well as science fans from industry, government and elsewhere. We welcome your input, including ideas for speakers and topics. Bring them with you to the next Café, or e-mail them and any questions to John.Cohen@UCDenver.edu

Essential information on our Web site at <http://CafeSciColorado.org>