EXECUTIVE SUMMARY [NON-CONFIDENTIAL, NON-TECHNICAL ABSTRACT FOR PUBLIC INFORMATION OR PROGRAM PROMOTION]: State in layman's terms the application's broad, long-term objectives and specific aims, making reference to the potential public benefits of the project relevant to California. Do not include proprietary or confidential information. This may be distributed before the funding decision has been finalized.

Legumes are able to beneficially interact with soil bacteria known as rhizobia. As a consequence of the symbiotic interaction, legumes fix nitrogen from the air and this constitutes a natural, cheap and environmentally friendly way of fertilizing plants. Tropical plants and their associated bacteria have not been studied in depth and may represent an important source of biodiversity. For a successful interaction to occur, there has to be a dialogue between the plant and the bacteria. Legumes "talk" to their bacterial counterparts and one of the communication mechanisms is called quorum sensing (QS). QS compounds are involved in antibiotic production, biofilm formation, plant nodulation, and production of virulence factors, among others. Biofilms are particularly interesting since they cost the nation billions of dollars yearly in equipment damage, product contamination and medical infections. Thus, some of these QS compounds have biotechnological applications. The aim of this work is to screen bacteria isolated from tropical legumes for QS compounds. We expect to find novel QS compounds that might have technological or health-related applications or might be involved in the establishment of a more successful symbiosis with legumes leading to a better nitrogen fixation.