EXECUTIVE SUMMARY [NON-CONFIDENTIAL, NON-TECHNICAL ABSTRACT FOR PUBLIC INFORMATION OR PROGRAM PROMOTION]: State 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.

This project will set the foundation for the development of a sensitive chemical sensor based on the sensing capabilities of the nose. The nose is able to recognize odorants by the sensing of a pattern of responses on the part of the nose receptors. While the nose is a sensitive organ and can smell certain odorants down in the parts per billion concentration range, the mechanism of the dynamic range has only recently been elucidated. A small molecule that is readily available in cells, GDP, has been demonstrated by experiments at San Jose State University in collaboration with a small company, Repliscent Technologies, to play a key role in the dynamic range of the sensitivity of the olfactory system.

With this in mind, a sensor is to be developed from the olfactory receptor proteins. Pangene Corporation, a company in Fremont, CA, will collaborate on the cloning portion of the project. This sensor may be a prototype for a chemical sensor that can replace dogs as sensors for drugs and explosives. Hence, this proposal requests funding for student stipend and faculty summer salary to work at Pangene for the development of olfactory receptors in a host cell system.