# "OLFACTORY IMPLANT TO RESTORE SENSE OF SMELL" VCU #11-102

## Applications

- Restoration of the sense of smell
- Applicable to treat anosmia from head injury, viruses and other causes

## Advantages

- Provides odor detection and discrimination
- Is customized for each patient
- Improves the safety and quality of life for the patient


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## Market Need

It is estimated that more than 0.3% of the population have impaired smell. For those with complete loss of smell (anosmia) there are currently no treatment options available. Individuals suffering from anosmia are unable to detect smoke, gas leaks, rancid food, or enjoy foods and fragrances – thereby effecting both safety and quality of life. A device that uses an external sensor array and a permanent implantation with the ability to directly interface with the olfactory centers of the brain would provide anosmics with the same life-changing treatment option deaf individuals have enjoyed with a cochlear implant.

## Technology Summary

VCU Inventors have developed an olfactory implant system to restore olfactory function in those that suffer from anosmia. The device relies upon chemical sensors for detecting odors which then transmit the signal to processor which directly stimulates electrodes positioned at various locations in the olfactory bulb. Patients will be able to not only detect the presence or absences of odors, but will be able to discriminate between different odors. The odor array and processor are worn externally, the signal is transmitted across the skin via radiofrequency, and the signal is delivered to an internally implanted electrode array.

## Technology Status

This technology currently is in prototype development.

Patent pending: U.S. and foreign rights are available.

VCU is seeking a development partner to work with the inventors to develop further prototypes and conduct clinical studies.