In collaboration with the NIH Centers for Accelerated Innovations, Rutgers Optimizes Innovation – HealthAdvance™ presents the following opportunities under the RADx-rad initiative:

**Novel Biosensing for Screening, Diagnosis and Monitoring of COVID-19 from Skin and the Oral Cavity**

- Emergency Awards RADx-RAD: Screening for COVID-19 by Electronic-Nose Technology (SCENT) (U18 Clinical Trial Not Allowed) [RFA-OD-20-017](#)  
  **Expression of Interest Due Date:** September 11th, 2020

- Emergency Awards RADx-RAD: Novel Biosensing for Screening, Diagnosis and Monitoring of COVID-19 From Skin and The Oral Cavity (Direct to Phase II SBIR (R44) Clinical Trial Not Allowed) [RFA-OD-20-020](#)  
  **Expression of Interest Due Date:** September 11th, 2020

- Emergency Awards RADx-RAD: Novel Biosensing for Screening, Diagnosis and Monitoring of COVID-19 From Skin and The Oral Cavity (Fast-Track STTR Clinical Trial Not Allowed) [RFA-OD-20-021](#)  
  **Expression of Interest Due Date:** September 11th, 2020

**Note** All projects funded under this RFA will actively coordinate, collaborate, and share data with the RADx-rad Data Coordinating Center, as allowed, and with considerations under tribal IRB processes, as appropriate. Researchers applying to this funding opportunity are strongly encouraged to review the Data Coordinating Center (DCC) funding opportunity [RFA-OD-20-019](#)

**PURPOSE**

NIH issued [Rapid Acceleration of Diagnostics (RADx)](#) in response to the declared public health emergency issued by the Secretary, Department of Health and Human Services (DHHS), for the 2019 Novel Coronavirus (COVID-19). The Rapid Acceleration of Diagnostics - Radical (RADx-rad) is one of four RADx emergency initiatives providing an expedited funding mechanism. The goal of RADx-rad is to solicit proposals for the development of novel, nontraditional approaches to identify the current SARS-CoV-2 virus or other markers of the COVID-19 disease that can be used in future outbreaks of COVID-19 and that could be applicable to other, as yet unknown, viruses. In early August, seven RADx-rad Funding Opportunity Announcements (FOAs) were published. Three of the FOAs in the RADx-rad initiative aim to support development of “Novel Biosensing for Screening, Diagnosis and Monitoring of COVID-19 from Skin and the Oral Cavity”. These FOAs solicit applications for development of novel
biosensing technologies that leverage the accessibility of human skin and the oral cavity for detection of biological, chemical and other biometric signatures of COVID-19.

While these FOAs call for relatively advanced projects, this **RADx-rad biosensing initiative also aims to support incubation of promising early stage projects solicited through the NIH’s Research Evaluation And Commercialization Hub (REACH) network**, including ROI – HealthAdvance to advance early Feasibility and Proof of Concept (analogous to Phase I SBIR projects). This special solicitation for REACH projects seeks applications for biosensing technologies intended for the detection of volatile organic compounds (VOCs) emanating from skin and/or multiple (i.e., biologic, chemical and physical) biosignatures captured from the oral cavity in COVID-19.

It is expected that projects funded through REACH will strongly demonstrate early feasibility of proposed R&D to position the projects for competitive SBIR/STTR Phase I or Phase II funding in the future.

**SPECIFIC OBJECTIVES**

Biosensing and detection technologies submitted to this initiative should provide reliable associations between biomarkers emanating from skin or the oral cavity to patients with symptomatic and asymptomatic COVID-19. Leveraging the accessibility of human skin and the oral cavity, this FOA seeks (1) to advance novel biosensing technologies that are innovative, safe, and effective, and (2) to implement such technologies into devices with integrated artificial intelligent (AI) systems for the detection, diagnosis, prediction, prognosis and monitoring of COVID-19 in clinical, community and everyday settings.

To this end, dedicated engineering and artificial intelligence systems are required. For skin monitoring, the device can include Electronic-nose (E-nose) technology or Gas Chromatography (GC). Thus, biosensing technologies targeting VOCs emanating from skin or the oral cavity will be referred to as **SCENT (Screening for COVID-19 by E-Nose Technology)**. **Oral biosensing devices** may consist of technologies that are thoroughly characterized as safe and effective in preclinical studies to conform to and perform in the oral cavity. Non-invasive, real-time, continuous or periodic measurements of VOCs and other biomarkers in breath, droplets, tissues and other samples emanating from the oral cavity as signatures of onset, progression, and resolution of COVID-19 are desirable.

Multidisciplinary collaborations are expected to ensure project success. Disciplines may include: Biomedical engineers, material scientists, biosensing experts, software engineers, chemists, dentists, clinicians, virologists, clinical trialists, biostatisticians, data analysts and other relevant experts in academia and industry.

**Note** **Oral biosensing is not limited to detection of volatile organic compounds (VOCs).** Biosensing devices are expected to target skin or the oral cavity as sampling sites. Skin biosensing designs must target detection of volatile organic compounds (VOCs, i.e. scents or odors) emanating from skin in passive and noninvasive manner for use at point of care. In addition to VOCs, oral biosensing technologies may target a wealth of biological, chemical and physical biosignatures representative of SARS-CoV-2 virus and/or COVID-19 disease sampled from exhaled breath/droplets, saliva, and tissues in the oral cavity using a variety of detection schemes.
AWARD AMOUNT
Up to $250,000 per year for up to 2 years.

OVERVIEW OF APPLICATION THROUGH ROI – HealthAdvance

1. Rutgers researchers who are developing technologies relevant to the funding opportunities described above should download Pre-Qualification Form here.

2. Completely filled Pre-Qualification should be sent to healthadvance@ored.rutgers.edu
   Complete submissions will be screened, and selected applicants will be invited to submit a full application with the help of a commercialization expert from the relevant industry (external consultant, paid for by HealthAdvance).

3. Full applications must be submitted to HealthAdvance by 5:00 PM on Oct 15th, 2020. Rutgers program team will present proposals to the NCAI team and coordinate the review process.

4. The final funding decisions will be made by the NIH Director. Awards will be made by December 15th, 2020.

NOTE: This initiative is not intended to support projects that propose discovery research to identify new biomarkers. Interested applicants may apply directly to the NIH, however applications through the Rutgers Optimizes Innovation – HealthAdvance channel do not require the formation of a business entity or a startup company.

For questions or more information, please contact:

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