

## 2022 Clinical Research in Periodontology Award



**Fig 1** Two co-authors, Georgios A. Kotsakis (left) and Richard P. Darveau (right), were present to accept the Clinical Research Award.

Each year, the American Academy of Periodontology (AAP) presents the Clinical Research Award, sponsored by Quintessence Publishing Company, to an outstanding published scientific study with direct clinical relevance in periodontics. The winning study must follow established scientific methods for a human study, be published in English in a scientific journal during the previous calendar year, directly apply to the practice of periodontics, and provide new information that can be readily used by practitioners in the evaluation of patients.

The 2022 award recognized the study titled "Human Variation in Gingival Inflammation," by Shatha Bamashmous, Georgios A. Kotsakis, Kristopher A. Kerns, Brian G. Leroux, Camille Zenobia, Dandan Chen, Harsh M. Trivedi, Jeffrey S. McLean, and Richard P. Darveau.

The study, which was published in *Proceedings of the National Academy of Sciences of the United States of America*, evaluated the host-bacteria relationship of experimental gingivitis and found three unique clinical inflammatory phenotype results (high, low, and slow). It was dis-

covered that in the slow-response group, interleukin-1 $\beta$  (an inflammatory mediator associated with gingivitis) was not associated with gingival inflammation, but significantly higher levels of *Streptococcus spp* were seen in association with the group. The low-response group had a low concentration of host mediators despite having bacterial accumulation and compositional characteristics similar to that of the high-response group. In all response groups, neutrophil and bone activation modulators were down-regulated, and novel tissue and bone protective responses were seen with gingival inflammation.

The changes in chemokine and microbial composition responses during gingivitis are telling. They indicate a variety of human responses to a disrupted gingival homeostasis, caused by variations in host immune profiles (low responders) and microbial community maturation (slow responders). Understanding these variations may help identify individuals susceptible to periodontitis and the clinical outcomes of destructive inflammation.

To view the full study, please visit <https://www.pnas.org/doi/full/10.1073/pnas.2012578118>. For information about the AAP Clinical Research Award, please visit <https://www.perio.org/for-members/aap-organizational-information/academy-awards/#clinical>

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