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Insight

Arthur A. Dugoni School of Dentistry

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## Insight - April 2019

Dugoni School of Dentistry

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# insight

Spring 2019 Research and Scholarship

Welcome to the spring 2019 issue of *Insight*, a quarterly newsletter celebrating the accomplishments of our community of scholars. We aim to spotlight insights from people at the Dugoni School working in all areas of scholarship, including clinical or biomedical research, the scholarship of teaching and learning, improvement of the health care system, and professional partnerships that advance the field.

## Introducing the Pacific Journal of Health

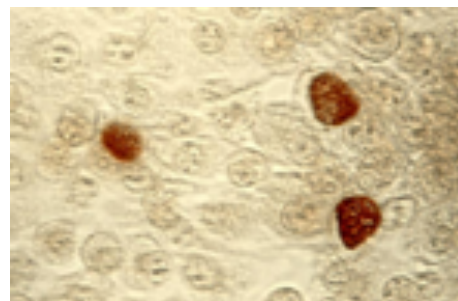
Have you checked out the *Pacific Journal of Health's* first issue? [scholarlycommons.pacific.edu/pjh/](http://scholarlycommons.pacific.edu/pjh/)  
You'll find a great article about how social media can be effectively used to promote oral health in public awareness campaigns. Don't miss it! Also be sure to follow @ PacificJHealth on Twitter for a curated feed of health research news: [twitter.com/pacificjhealth](https://twitter.com/pacificjhealth)

## RESEARCH IN THE SPOTLIGHT

***Chlamydia pneumoniae* is present in the dental plaque of periodontitis patients and stimulates an inflammatory response in gingival epithelial cells**

### What is it?

*C. pneumoniae* is a bacterium that causes respiratory infections including one out of ten cases of community-acquired pneumonia. It has also been linked to many other conditions including circulatory disorders, multiple sclerosis and Alzheimer's. However, it was not previously thought to infect oral cells. This research examines whether *C. pneumoniae* is present in dental plaque, whether it has the potential to infect oral epithelial cells, and the outcome of infection.



# insight

Research and Scholarship

## **What problem does it aim to solve?**

The goal is to understand the role of *C. pneumoniae* in the mouth and how it may contribute to inflammation and periodontal disease.

## **How does it work?**

Samples were taken from people with and without periodontal disease and analyzed. Researchers also investigated a mechanism that could explain how *C. pneumoniae* could contribute to inflammation and periodontitis. The key findings were that 1) *C. pneumoniae* is found more often in dental plaque from patients with periodontal disease than in the plaque of people with healthy mouths; and 2) the bacterium infects human gingival epithelial cells in vitro and can stimulate initiation of inflammation.

## **What are the real-world implications?**

This research has identified a previously unrecognized potential contributor to periodontal disease, one that is already known to have other negative impacts on health. The research results also suggest mechanisms by which the bacterium could contribute to gum disease.

## **What are the next steps?**

More research should be done to learn how pathogenic micro-organisms interact in the mouth, as well as about *C. pneumoniae*'s role in oral health problems and systemic diseases. Such research could lead to strategies for both treatment and prevention of oral and lung disease.

## **Source**

"*Chlamydia pneumoniae* is present in the dental plaque of periodontitis patients and stimulates an inflammatory response in gingival epithelial cells" (2019), *Microbial Cell*, Vol. 6, pp. 197 - 208; doi: 10.15698/mic2019.04.674

## **AUTHORS**

Cássio Luiz Coutinho Almeida-da-Silva, Department of Biomedical Sciences,  
Arthur A. Dugoni School of Dentistry

Tamer Alpagot, Department of Periodontics, Arthur A. Dugoni School of Dentistry

Ye Zhu, Department of Biomedical Sciences, Arthur A. Dugoni School of Dentistry

Sonho Sierra Lee, College of Letters and Science, University of California, Berkeley,  
and DDS Program, Arthur A. Dugoni School of Dentistry

Brian P. Roberts, College of Letters and Science, University of California, Los Angeles

Shu-Chen Hung, Department of Biomedical Sciences, Arthur A. Dugoni School of Dentistry

Norina Tang, Department of Biomedical Sciences and Department of Periodontics,  
Arthur A. Dugoni School of Dentistry

David M. Ojcius, Department of Biomedical Sciences, Arthur A. Dugoni School of Dentistry

### NOTEWORTHY PUBLICATIONS

*Research by Dugoni School faculty published in the last four months, retrieved from Scopus April 2, 2019*

**Amaral, R.R., Cohen, S., Ferreira, M.V.L., Soares, B.M., Côrtes, M.I.D.S.** Antimicrobial Photodynamic Therapy associated with long term success in endodontic treatment with separated instruments: A case report (2019) Photodiagnosis and Photodynamic Therapy, 26, pp. 15-18. [Abstract >](#)

**Oh, H., Park, J., Lagravere-Vich, M.O.** Comparison of traditional RPE with two types of micro-implant assisted RPE: CBCT study (2019) Seminars in Orthodontics, 25 (1), pp. 60-68. [Abstract >](#)

**Hwang, H.-S., Jiang, T., Sun, L., Lee, K.-M., Oh, M.-H., Biao, Y., Oh, H.-K., Bechtold, T.E.** Condylar head remodeling compensating for condylar head displacement by orthognathic surgery (2019) Journal of Cranio-Maxillofacial Surgery, 47 (3), pp. 406-413. [Abstract >](#)

**Sun, H.-H.B., Park, C.M., Elo, J.A.** Rapidly expanding mixed lesion of the maxilla in a 17-month-old boy (2019) Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology, 127 (3), pp. 195-199. [Abstract >](#)

**Chung, I.-C., Ouyang, C.-N., Yuan, S.-N., Lin, H.-C., Huang, K.-Y., Wu, P.-S., Liu, C.-Y., Tsai, K.-J., Loi, L.-K., Chen, Y.-J., Chung, A.-K., Ojcius, D.M., Chang, Y.-S., Chen, L.-C.** Pretreatment with a heat-killed probiotic modulates the NLRP3 inflammasome and attenuates colitis-associated colorectal cancer in mice (2019) Nutrients, 11 (3), art. no. 516. [Abstract >](#)

**Türker, N., Büyükkaplan, U.S., Sadowsky, S.J., Özarslan, M.M.** Finite Element Stress Analysis of Applied Forces to Implants and Supporting Tissues Using the "All-on-Four" Concept with Different Occlusal Schemes (2019) Journal of Prosthodontics, 28 (2), pp. 185-194. [Abstract >](#)

**Schoenbaum, T.R., Solnit, G.S., Alawie, S., Sadowsky, S.J.** Treatment of peri-implant recession with a screw-retained, interim implant restoration: A clinical report (2019) Journal of Prosthetic Dentistry, 121 (2), pp. 212-216. [Abstract >](#)

**Hartmann, R.C., Fensterseifer, M., Peters, O.A., de Figueiredo, J.A.P., Gomes, M.S., Rossi-Fedele, G.** Methods for measurement of root canal curvature: a systematic and critical review (2019) International Endodontic Journal, 52 (2), pp. 169-180. [Abstract >](#)

**Wu, T.-R., Lin, C.-S., Chang, C.-J., Lin, T.-L., Martel, J., Ko, Y.-F., Ojcius, D.M., Lu, C.-C., Young, J.D., Lai, H.-C.** Gut commensal Parabacteroides goldsteinii plays a predominant role in the anti-obesity effects of polysaccharides isolated from Hirsutella sinensis (2019) Gut, 68 (2), pp. 248-262. [Abstract >](#)

**Zheng, M., Bender, D.** Evaluating outcomes of computer-based classroom testing: Student acceptance and impact on learning and exam performance (2019) Medical Teacher, 41 (1), pp. 75-82. [Abstract >](#)

**Bui, F.Q., Almeida-da-Silva, C.L.C., Huynh, B., Trinh, A., Liu, J., Woodward, J., Asadi, H., Ojcius, D.M.** Association between periodontal pathogens and systemic disease (2019) Biomedical Journal, 42 (1), pp. 27-35. [Abstract >](#)

**Sun, H.-H.B., Lin, S.-C., Shimel, B., Park, C.M., Sharaschandra, S.** Vascular Floor of Mouth Mass with Unanticipated Intracranial, Orbital, and Vertebral Associated Involvements (2019) Head and Neck Pathology. In press. [Abstract >](#)

**Almeida-da-Silva, C.L.C., Ramos-Junior, E.S., Morandini, A.C., Rocha, G.D.C., Marinho, Y., Tamura, A.S., de Andrade, K.Q., Bellio, M., Savio, L.E.B., Scharfstein, J., Ojcius, D.M., Coutinho-Silva, R.** P2X7 receptor-mediated leukocyte recruitment and Porphyromonas gingivalis clearance requires IL-1 production and autocrine IL-1 receptor activation (2019) Immunobiology, 224 (1), pp. 50-59. [Abstract >](#)

**Tolstunov, L.** Surgical Algorithm for Alveolar Bone Augmentation in Implant Dentistry (2019) Oral and Maxillofacial Surgery Clinics of North America. In press. [Abstract >](#)

**Soares, M.P.R., Silva, D.P., Uehara, I.A., Ramos, E.S., Jr., Alabarse, P.V.G., Fukada, S.Y., da Luz, F.C., Vieira, L.Q., Oliveira, A.P.L., Silva, M.J.B.** The use of apocynin inhibits osteoclastogenesis (2019) Cell Biology International. In press. [Abstract >](#)

**Garnett, B.S., Mahood, K., Nguyen, M., Al-Khateeb, A., Liu, S., Boyd, R., Oh, H.** Cephalometric comparison of adult anterior open bite treatment using clear aligners and fixed appliances (2019) Angle Orthodontist, 89 (1), pp. 3-9. [Abstract >](#)

## SAVE THE DATE: EXCELLENCE DAY

The **39th Annual OKU-Sutro Excellence Day** on Wednesday, May 22, 2019 is a day to showcase the school's research, clinic cases, community oral health service and personalized instruction projects (PIP).

Excellence Day is a long-standing tradition that allows the Dugoni School community to share their projects with colleagues, friends and family. Although there is a competitive component, Excellence Day is a collaborative celebration of the multi-dimensional interests and talents of the Dugoni School student body.

Abstracts of the work are submitted online to the University Abstract website and to the new *Pacific Journal of Health*:

[scholarlycommons.pacific.edu/excellence-day/](https://scholarlycommons.pacific.edu/excellence-day/)

[scholarlycommons.pacific.edu/pjh/](https://scholarlycommons.pacific.edu/pjh/)

For more information or to get involved, contact Dr. Karen Schulze.



**Contact *Insight*:** Have comments or suggestions on this or future issues of *Insight*? Contact Dr. David Ojcius, Assistant Dean for Research and Chair of the Department of Biomedical Sciences, to share your thoughts or to learn more about how to get involved in research at the Dugoni School. Email: [dojcius@pacific.edu](mailto:dojcius@pacific.edu)