Insight

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Insight - Summer 2020

Dugoni School of Dentistry

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Welcome to the summer 2020 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.

**Scholarship in the Dental School During the COVID19 Lockdown**

Despite the shelter in place order from the city of San Francisco in response to the novel coronavirus outbreak, faculty and students in the school have been busy writing manuscripts, submitting grant applications to the National Institutes of Health and other extramural funding agencies, and participating in online journal clubs and seminars. The laboratory room has also been closed except for essential personnel. We are grateful to Harmony Matshik Dakafay, director of the laboratory room, for coming to the school to check that everything is fine. In particular, she has been receiving orders of liquid nitrogen and refilling liquid nitrogen tanks of individual faculty. These tanks hold reagents and cell lines that are expensive and sometimes irreplaceable.

We look forward to returning to the school and laboratory room soon. In the first phase of reopening, we plan to maintain social distancing rules and require that everybody in the room wear a mask. Initially only faculty, permanent staff, and residents will be allowed in the room.
Excellence Day Goes Online

2020 was supposed to be the 22nd time that the annual OKU-Sutro Excellence Day was held, but COVID-19 had other plans. So the normal in-person event was replaced an online awards ceremony as part of the celebration for the Class of 2020.

The awards program is a long-standing tradition that provides an opportunity for the Dugoni School family to share research, clinical and community service achievements. Outstanding Personalized Instruction Program projects were also highlighted.

“Congratulations to the Class of 2020! You have shown your passion and resilience through your time with us and especially during the last few months with the COVID-19 pandemic and the calls for all of us to focus on solving the social and health inequities in our community and in our nation. Your education and your world has changed you. You have the values and the grit to succeed and we are so incredibly proud of you,” said Dean Nader A. Nadershahi.

The Excellence Day presentations are also showcased in a virtual gallery, and visitors can explore the wide range of projects and topics, including slideshows, posters, articles and video at https://excellenceday.pacific.edu

Password to view presentations: dugoni155

Neurotrophins BDNF and NT4/5 accelerate dental pulp stem cell migration

What problem does it aim to solve?
Promoting tissue regeneration is an important part of dental treatment. Human Dental Pulp Stem Cells (DPSCs) are an important part of tissue regeneration — they can grow into different kinds of tissue and regenerate themselves. Neurotrophins (NTs) are growth factors that can feed and sustain neurons and promote their survival and growth. This study focused on the expression of particular NTs and how they could promote the migration of DPSCs to where they can regenerate tissue.

How does it work?
Human DPSCs were analyzed in the laboratory, ultimately finding that neurotrophin family members BDNF and NT4/5 accelerated DPSCs migration in vitro.

What are the real-world implications?
Future novel drug candidates could emerge.

What are the next steps?
Future work could focus on how different kinds of stimuli impact expression of different neurotrophic factors, as well as how various neurotrophic factors affect DPSCs.

Source
Nan Xiao, Der Thor, Wei Ye Yu, Department of Biomedical Sciences, Arthur A. Dugoni School of Dentistry, University of the Pacific
Noteworthy Publications

Congratulations to Dugoni School faculty, staff, student and resident researchers involved in the following research publications in the last six months as sourced by Scopus, the abstract and citation database of peer-reviewed literature. Visit the abstract links to learn more.


Shenker, B.J., Walker, L.M., Zekavit, Z., Ojcius, D.M., Huang, P.-R., Boesze-Battaglia, K. Cytolethal distending toxin-induced release of interleukin-1ß by human macrophages is dependent upon activation of glycogen synthase kinase 3ß, spleen tyrosine kinase (Syk) and the noncanonical inflammasome (2020) *Cellular Microbiology*, 22 (7), art. no. e13194. View ›


Martel, J., Ojcius, D.M., Ko, Y.-F., Young, J.D. Phytochemicals as Prebiotics and Biological Stress Inducers (2020) *Trends in Biochemical Sciences*, 45 (6), pp. 462-471. View ›


Woo, D.A. An innovative online approach to clinical faculty calibration (2020) *Journal of Dental Education*. View ›

Zeitlin, B.D. Banking on teeth – Stem cells and the dental office (2020) *Biomedical Journal*. View ›