



STUDENT PROFILE:  
GRACE HUANG (D'21)

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## Excelling at Research, Sharing her Talents

Since arriving at Penn Dental Medicine, fourth-year student Grace Huang (D'21) has been devoted to student research, an interest she developed in high school. This year, Huang gained special recognition for her work as the first-place winner (junior category) of the 2020 American Association for Dental Research (AADR) Hatton Competition. The prestigious annual competition awards prizes in three categories with winners selected from the top abstracts submitted nationwide.

While Huang views research as an integral part of her dental education, as a dental student, she has lent her varied talents to many aspects of student life, serving as the Academic Chair for the Class of 2021; the president of Penn Dental Medicine's premier *a cappella* group, SoundBites; and the president of the Penn Shotokan Karate Club. Huang, who has participated in both Research and Periodontics Honors, was awarded the William S. Kramer Award of Excellence by the Omicron Kappa Upsilon Honor Society last year. And her interests outside of school take her to center stage, as both an operatic soprano and pop rock vocalist.

"Penn Dental Medicine has provided so many different opportunities to learn and grow personally and professionally," says Huang. "In regard to research, it has allowed me to interact with invaluable mentors, while broadening my perspective and understanding as a clinician."

### AN EXPLORATION OF BACTERIA, TOXINS, AND IMMUNE RESPONSE

Huang, who entered Penn Dental Medicine through the seven-year Bio-Dental Program, got involved in research at the School even before coming here as a student. She met her research mentor, Dr. Bruce Shenker, Professor in the Department of Basic & Translational Science, while presenting a poster at an International Association for Dental Research (IADR) meeting as a Penn undergraduate freshman. She started working in his lab later that year.

"Dr. Shenker has been extremely supportive," says Huang. "He suggested that I apply to the Research Honors Program before starting my D1 year, and I spent much of the spring semester of my junior year and the following summer performing experiments."

Huang worked with Dr. Shenker on the winning project of the Hatton Competition, titled "Cytotoxic Distending Toxin (Cdt) Induces Macrophages to Release Pro-Inflammatory Mediators."

"My project is about the putative periodontal pathogen *Aggregatibacter actinomycetemcomitans* (*Aa*), its cytotoxic distending toxin (Cdt), and this toxin's pro-inflammatory effects on macrophages," says Huang. "Previous studies have demonstrated Cdt's ability to induce macrophages to secrete pro-inflammatory cytokines, and the goal of this study was to determine its effects on other pro-inflammatory mediators. Basically, this helps us understand how this toxin affects a component of the host's immune response."

## IN THE ERA OF COVID, A VIRTUAL SUBMISSION

As a 2019 recipient of a Penn Dental Medicine AADR Travel Award for this project, Huang would have attended this year's IADR/AADR/CADR annual meeting in March to present her work. With the meeting cancelled due to the coronavirus pandemic, the AADR Hatton Competition finalists were asked to submit slide and video presentations and were judged on their submission. Judging criteria included originality and design of the investigation, quality of the data produced, suitability of the methods of analysis used, scientific value of the work, quality of the oral presentation, and demonstration of mastery of the subject.

Huang believes her research experiences have encouraged her to think more critically and seek a deeper understanding of everything she does as a clinician as well.

"Certainly, learning about the pathophysiology of Aa virulence factors is directly applicable to understanding patients' clinical presentations," says Huang, "but also, many of my patients want to understand the logic behind the procedures and the materials. Being able to communicate the rationale or the science behind everything I do during an appointment has allowed me to build more meaningful and trusting relationships with my patients. That's also what's so great about Penn's advocacy for evidence-based care."

## A TEAM EFFORT

As for the achievement of taking a top prize in the Hatton Competition, Huang stresses it was a team effort. "This would not have been possible without the guidance of Dr. Shenker and Lisa Pankoski-Walker from his lab; the opportunity provided by Penn Dental Medicine Research Day; and the feedback from Dr. Kathleen Boesze-Battaglia, Professor and Director of the Research Honors Program, about my presentation," says Huang.

Huang is preparing to apply to specialty programs and hopes to stay involved in research during her postdoctoral study and throughout her career: "I love to present and teach, so I can definitely see myself being involved in academic dentistry in the future."

## Dr. Marie-Elena Cronin (D'20, GD'22) Recognized with Student Leadership Award



Dr. Marie-Elena Cronin (D'20, GD'22), a 2020 graduate of Penn Dental Medicine's DMD program, was recognized by the Delta Dental Community Care Foundation as a recipient of its 2020 Student Leadership Award.

The Foundation, the philanthropic arm of Delta Dental of California, presents the awards annually to exceptional graduates in recognition of their leadership and dedication to providing dental care and oral health education to the various communities in which Delta Dental serves. Recipients are nominated by the dental schools in Delta Dental's 15-state and D.C. service area, chosen for their leadership skills as demonstrated by the student's activities and accomplishments during dental school; public service commitment as demonstrated by civic and community involvement related to dental service; and outstanding service or accomplishments in the field of dentistry or related science.

Selected Student Leadership Award recipients receive \$10,000 from the Foundation as they embark on the next stage of their dental careers. The hope is that these students will carry their passion for service forward as they begin clinical practice and give back to their communities.

Dr. Cronin was actively engaged in a variety of leadership roles and service activities throughout her time at Penn Dental Medicine. One of her key positions was serving as Executive Director of the Philadelphia Oral Cancer 5K & Walk, an annual student outreach and fundraising event. Through her leadership and passion for the project, she helped to motivate student volunteers to build participation in the event to new levels. In 2019, they had over 500 runners and walkers and raised \$20,000 in support of oral cancer research (The 2020 event had to be cancelled due to COVID-19).

"This past year, we created a fund where all the money we raise goes directly to oral cancer research right here at Penn Dental, which was a breakthrough for our organization," says Dr. Cronin.

In the area of community service, Dr. Cronin was a community honors student, completing her community health honors project with the Homeless Health Initiative (HHI), a multidisciplinary program through Children's Hospital of Philadelphia (CHOP) that provides free education and health services to children living in homeless shelters.

"When I started volunteering with HHI, I thought the most important part of this program was detecting cavities," recalls Dr. Cronin. "Now, I realize the value of patient education. By simply spending a few minutes with each child to educate them on the importance of taking care of their teeth through oral hygiene and diet, we can make a great impact on the lives of these especially vulnerable children."

Dr. Cronin is presently pursuing postdoctoral training in orthodontics at Penn Dental Medicine.

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ABOVE: Dr. Marie-Elena Cronin (D'20, GD'22) is presently pursuing postdoctoral training in the School's orthodontics program.