



STUDENT PROFILE:  
CHRISTOPHER LAI (D'19)

## 4th-Year Student Christopher Lai Honoring Past, Shaping the Future

By the time he graduates, fourth-year student Christopher Lai (D'19) will have completed two very different honors projects. Through the community oral health honors program, he is working with underserved patients in Philadelphia's Chinatown to improve dental care in the low-income neighborhood where he spent part of his childhood. And, through the research honors program, he plans to patent a new product that could lead to safer dental care for countless patients.

### HONORING HIS PARENTS AND HIS PAST

Born in Chinatown to immigrants from Hong Kong, Christopher moved to South Philadelphia when he was an infant, but continued to attend Holy Redeemer Elementary School in Chinatown. To support their children, his parents worked long hours in poor conditions. When his father died, Christopher balanced schoolwork with household duties and, with the help of his community, became the first member of his family to graduate high school.

"It was definitely an environment of shared sacrifices, and that has fueled my passion to give back," he says.

### A NEED FOR PREVENTIVE CARE

Like many low-income children in his Chinese-American community, Christopher did not visit a dentist until he was a teen. When he did, he was faced with significant oral health issues. For the next generation of children in Chinatown, Christopher wants something better: education-based, preventive oral health care.

Two years ago, in his first year as a community health honors student, he developed a program of visits to Chinatown elementary schools, churches, retirement homes, and day care centers to educate residents about oral hygiene and refer them for care.

### ESTABLISHING A PENN DENTAL PRESENCE

Christopher's goals for the Chinatown project included establishing Penn Dental Medicine's presence in the community, promoting oral health through education, connecting Chinese-American residents to dental homes, providing translation of dental instructions and forms, and establishing oral health screenings to detect and manage issues. Along the way, he hoped to show young Chinese-Americans that a dental career is possible through hard work and study.

With the help of fellow community health honors students Shimu Liu (D'19) and Effie Yanjing Ma (D'19), he has taken significant steps to meet these goals. "Over the past two years, we have participated in community health fairs and provided oral education and screenings for more than 250 adults," says Christopher. "We translate for them, provide dental supplies and refer them to dentists at Penn Dental Medicine." He is pleased to report that "a good number" have ended up becoming patients in Penn Dental Medicine's clinic.

Perhaps the most personally meaningful part of the project for him has been visiting his former school, Holy Redeemer, to discuss oral hygiene with students; set up a fun, educational interactive photobooth; and provide each child with a 'dental report card'. In addition, by establishing an annual visit from the Penn Smiles mobile clinic to the school, the team has brought oral exams, restorative work, cleanings, and x-rays to Chinatown students of all ages.

"I understand the challenges and struggles of immigrants in low-income areas," he says. "Dental care is not on their minds because they are concentrating on survival. With Penn Dental Medicine supporting me, this was the perfect opportunity to go back and help."

### A PROMISING NEW DENTAL PRODUCT

In addition to his groundbreaking work in Chinatown, Christopher has channeled another passion — this one for dental materials and products — into a project in Penn Dental Medicine's research honors program. Under the guidance of Dr. Fusun Ozer, associate professor of restorative dentistry, Christopher has developed an innovative antimicrobial dental acrylic and is in the early stages of the patent process.

The inspiration for the acrylic came from Christopher's experience working in an orthodontist's office before dental school. "I saw that

there was a big problem with bacteria growing on orthodontic appliances," he explains.

When he learned from Dr. Ozer about other dental products with antibacterial properties, he wondered if one might be developed for orthodontic work. He and Dr. Ozer began to formulate and test acrylic compounds, eventually finding one that worked well not only in orthodontics, but also in other aspects of dentistry. (As a side project, they are also working on a bonding agent with antibacterial properties.)

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### **"AMAZING RESEARCH FACULTY"**

The research team is in the process of publishing a paper on the project, which Christopher will present in June at the Student Competition for Advancing Dental Research and its Applications (SCADA) competition in Vancouver as part of the AADR/IADR/CADR Annual Meeting.

"There are many amazing research faculty at Penn, including Dr. Ozer and Dr. Francis Mante [clinical associate professor of restorative dentistry]," says Christopher, who has also travelled to Florida and Japan to present his research. "They are wonderful mentors who have supported me throughout this project and watched my passion grow."

With a bright future ahead of him, Christopher hopes to combine all of his passions. He plans to pursue a residency in craniofacial orthodontics, helping children with cleft lips and palates in underserved areas. In addition, he will continue developing new dental products.

"Penn Dental Medicine has given me the flexibility to do all of the things that interest me," he says. "My success would not have been possible without the School's support."