

# PEKING UNIVERSITY



 北京大学 口腔医学院  
PEKING UNIVERSITY SCHOOL OF STOMATOLOGY

ISSUE 01 SEPT 2020

## SCHOOL OF STOMATOLOGY *Newsletter*



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# M

## ESSAGE FROM THE DEAN

Dear friends,

This is our new way of sharing information. You will receive the latest news about our scientific research, as well as updates on our events, staff and activities during these challenging times of much uncertainty, when all of us are contributing our utmost effort in the fight against COVID-19.

The COVID-19 pandemic has greatly disrupted our normal life and work routines. Over the past few months, we suspended our entire international programs until further notice. However, we never stopped providing our clinical services to patients with dental emergencies during these difficult times. Furthermore, we were the first to publish health and safety guidelines on how clinical dental treatment should respond to COVID-19. Our scientists have worked very hard during the international lockdown, and have managed to publish some high quality papers in top-ranked journals. You will find detailed information about these achievements in this newsletter.

While the situation is gradually returning back to normal in Beijing, stringent protective measures are still being implemented and we would like to convey our sincere concerns to all colleagues and friends worldwide.

It has always been a pleasure working with you and we wish you all the best in health and safety!

The Peking University School of Stomatology Newsletters can be downloaded from our website <https://ss.bjmu.edu.cn/News/Main?siteId=1029>. Your feedback is warmly welcomed.



Yours sincerely,  
Chuambin Guo

*Chuambin Guo*

Dean and Professor  
Peking University School of Stomatology

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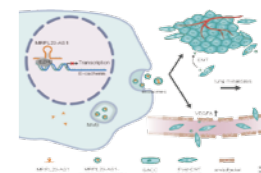
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The Peking University School of Stomatology Newsletter is a publication for alumni and friends of Peking University and is produced by the Office of International Communication. Please feel free to send us suggestions or ideas so that we can improve this publication.

### Editorial Board

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# PEKINGERS ENTHUSIASTICALLY DO DUTY TO NATION

Seventeen years ago, hundreds of Pekingers rushed into the trenches of anti-SARS battle-grounds across the country, with some of them losing their lives in the fight. Seventeen years later, Pekingers are again answering the call to national duty.

Once again, it is the PKU spirit that encourages generations of Pekingers to selflessly combat disease for their fellow citizens



Several medical teams from PKU-affiliated hospitals have been dispatched to Wuhan soon after the outbreak of COVID-19 in January. Some of them had prior experience tackling SARS in 2003, and selflessly left their families to contribute their expertise to a Wuhan relief team comprising doctors and nurses trained in relevant fields such as respiratory illnesses and intensive care. These brave men and women were on the front line in the battle against the new coronavirus in Wuhan for over 60 days, putting their own lives at risk so that others could be given a chance to survive the pandemic.



A group of 265 medical staff (divided into 10 groups) from Peking University School of Stomatology, joined the medical team to help with nucleic acid testing. Wearing heavy protective suits and face masks, they worked within tents outdoors, taking residents' throat swabs, registering their information, and putting the samples away in a protected storage box. These boxes would later be transported to a local disease control and prevention center for analysis.



Back in Beijing, a new cluster of local COVID-19 infections in June raised the city public health emergency response from the third to the second level.

Beijing took several measures under the second level of the public health emergency response. Residents of Beijing's medium and high-risk areas, as well as those related to the Xinfadi market cluster, were not permitted to leave Beijing. Other residents could leave the city only if their trip was deemed absolutely necessary, provided they had negative nucleic acid test results no older than seven days. The city administration carried out extensive nucleic acid testing for residents who needed it most.



## FOREIGN COLLEAGUES FROM MEIKAI UNIVERSITY AND ASAHI UNIVERSITY GRACIOUSLY SENT SUPPORT AND SUPPLIES



Peking University School of Stomatology never stopped providing clinical services for patients with dental emergencies during the pandemic outbreak. At the very beginning, we were lacking in N95 masks, face shields, replacement shields, protective goggles and other medical items, but these were graciously provided as gifts from Meikai University and Asahi University, which arrived just in the nick of time.

As the COVID-19 pandemic swept through our country, Chairperson Jun Miyata, President Toshikazu Yasui and President Ohtomo of these Japanese universities expressed their concerns and support to us and helped in successfully overcoming the supply shortage during these difficult time by sharing their limited resources. 102 packages of supplies arrived on time in good condition. Written on each package was this heart-warming message: "Though miles apart, we are under the same sky".

This is not the first time Meikai University and Asahi University had offered us help. On many occasions when we had difficulties in dealing with some emergencies or tricky problems, they had often been there to show their kindness and solicitude towards our team.

The current pandemic has presented an unprecedented challenge for the whole world, but it also provides us with an opportunity to offer, as a global community, our collective expertise and mutual support. We greatly cherish our friendship with our foreign colleagues from Meikai University and Asahi University and are willing to assist them with any possible support in the future.



## CLASS OF 2020 COMMENCEMENT CEREMONY

The Peking University School of Stomatology Commencement Ceremony 2020 for 73 undergraduates and 130 post-graduate students was held on June 29. Due to public health considerations of the recent COVID-19 outbreak in Beijing, the



Peking University School of Stomatology decided to hold the 2020 graduation ceremony online. We are incredibly proud of all our students who have worked hard and are finally graduating this special year, and wish them good luck in their new endeavours all around the amazing and challenging world.



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PEKING UNIVERSITY SCHOOL OF STOMATOLOGY  
2020 毕业纪念章



# QS WORLD UNIVERSITY RANKINGS BY SUBJECT

On March 3, “QS World University Rankings by Subject” published the latest version of “Rankings 2020”. The Peking University School of Stomatology ranks among the top 20 dental schools worldwide and is top amongst all dental schools within mainland China. The “QS World University Rankings by Subject” are based upon academic reputation, employer reputation and research impact.

From 2015 to 2020, Peking University School of Stomatology continued to occupy the top place among dental schools within mainland China.

# RANK	UNIVERSITY	LOCATION	COMPARE	STARS*
1	King's College London	United Kingdom		
2	Academic Centre for Dentistry Amsterdam (ACTA), Amsterdam the Netherlands	Netherlands		
3	University of Michigan-Ann Arbor	United States		
4	The University of Hong Kong	Hong Kong SAR		
5	Harvard University	United States		
6	Tokyo Medical and Dental University (TMDU)	Japan		
7	University of Gothenburg	Sweden		
8	Karolinska Institutet	Sweden		
=9	University of Bern	Switzerland		
=9	University of California, San Francisco	United States		
11	Queen Mary University of London	United Kingdom		
=12	University of Washington	United States		
=12	University of Zurich	Switzerland		

# RANK	UNIVERSITY	LOCATION	COMPARE	STARS*
14	New York University (NYU)	United States		
15	University of Birmingham	United Kingdom		
16	UCL	United Kingdom		
17	Complutense University of Madrid	Spain		
=18	USP Universidade de São Paulo	Brazil		
=18	University of North Carolina, Chapel Hill	United States		
20	Peking University	China (Mainland)		
21	The University of Manchester	United Kingdom		
22	University of Pennsylvania	United States		
23	Malmö University	Sweden		
24	University of British Columbia	Canada		
25	KU Leuven	Belgium		




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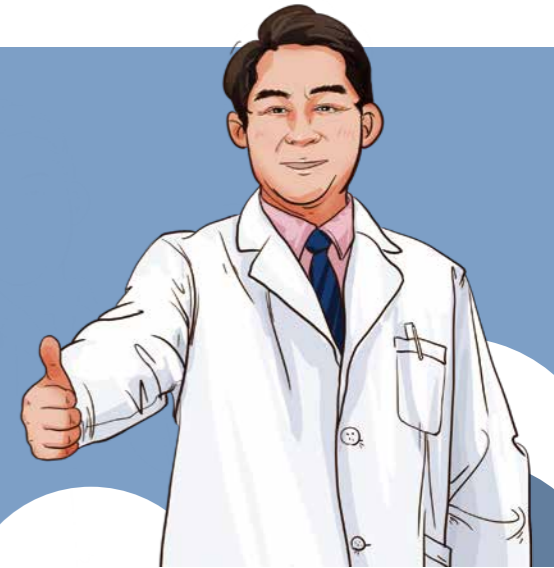



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# S CHOLAR ALEXIS HENG'S LIFE IN PKU-SS

Since its founding 70 years ago, the Peking University School and Hospital of Stomatology has produced world-class oral healthcare professionals, and has become renowned worldwide as a center of excellence in oral healthcare teaching, research and innovation. The Peking University School & Hospital of Stomatology has 664 dental units for daily clinical services, and 171 ward beds within the Oral and Maxillofacial Surgery Department. On average, the Hospital treats about 1.76 million outpatients and 7,796 inpatients patients annually. This has enabled the Peking University School & Hospital of Stomatology to become one of the largest dental teaching hospitals in the world.

The Peking University School & Hospital of Stomatology provides a comprehensive scientific research platform, including National Engineering Laboratory for Digital and Material Technology in Stomatology, National Clinical Research Center for Oral Diseases, Beijing Key Laboratory of Digital Stomatology and CFDA Test Center for Dental Materials and Devices in China. A diverse array of advanced S&R equipment and platforms have been established in the central laboratory, which meet the requirements of all areas of dental research.



For many years, the Peking University School of Stomatology (PKU-SS) has served as a portal to the outside world, working alongside a broad range of international scholarly organizations and fostering collaborative relationships with 48 institutions worldwide. The School regularly invites world-renowned scholars to visit, and many distinguished visiting foreign professors are honorary members of its faculty. It has organized many stomatology-related international conferences and symposia.



Dr. Alexis Heng is one of these foreign scholars who have joined PKU-SS as an international faculty member in 2019. He has worked at various renowned universities and research institutions worldwide, including the University of Manchester (UK), ETH-Zurich (Switzerland), The National University of Singapore, Nanyang Technological University (Singapore), Bioprocessing Technology Institute (Singapore) and The University of Hong Kong. To date, he has more than 225 international journal publications that have garnered around 6,000 citations, with a cumulative H-index of 45 (Scopus, Elsevier Inc.). We invited him to talk about his working experience at PKU-SS, as a representative of the many international scholars here. Our interview focuses on two major aspects - scientific research and daily life.



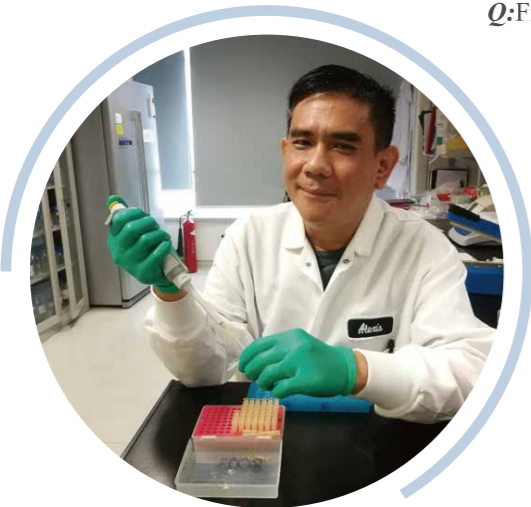
*Alexis Heng, joined PKU-SS as an international faculty member in 2019*

## Part I. Scientific research

**Q:**As a visiting scholar, what was the reason for your choosing Peking University School of Stomatology?

**Alexis Heng:**There are several reasons. First and foremost, I want academic exposure and research experience in a Chinese University, because of the growing importance of China in the world economy, and her increasing influence in world affairs due to the Belt and Road initiative. Secondly, scientific research in China has made great progress in recent years, with the total volume and quality of scientific publications currently being only second to the USA. Thirdly, there is greater availability and more opportunity for grant funding in China, particularly in biomedical science.





**Q:**From your point of view, what are the major similarities and differences between PKU-SS and the other academic institutions that you have worked for?

**Alexis Heng:**The similarity of PKU-SS with most reputable foreign universities is that all academic staff and students are diligent, professional, and committed to life-long learning. The major difference is that clinical staff and students in China are more strongly involved and hands-on in basic scientific research. This is in sharp contrast to most foreign universities, where clinical staff are more focused on clinical teaching and service. Very often, when foreign clinical staff are involved in research, their focus is very

clinically-oriented and seldom overlap with basic scientific research. Hence, the biggest competitive advantage that PKU-SS has over foreign dental schools, are that clinicians here are highly-involved and proficient in basic scientific research.

**Q:**Regarding the research facilities and environment in PKU-SS, how do you like it?

**Alexis Heng:**These are excellent and world-class. I am completely satisfied.

After joining PKU-SS, his current research focus is on the convergent and overlapping fields of stem cells, tissue engineering and biomaterials. He is particularly interested in the potential clinical applications of dental-derived stem cells and is studying their interactions with novel biomaterials via cutting-edge technology platforms such as single-cell genomics and proteomics. He said he was impressed by the staff and students of PKU-SS. For example, one evening at 11 pm, he gave a call to a student to say that he forgot to add a certain chemical reagent to an experiment, and that the entire experiment should be discarded the next day. But the student promptly went and added the chemical reagent to the experiment in the middle of the night. So he is quite satisfied with the research environment in PKU-SS. During his one and the half years at PKU-SS, he has managed to successfully obtain a NSFC research grant, and has published two review papers as first author, as well as co-authored a number of research papers.



Alexis Heng and his family at the Confucius temple and Imperial College museum

## Part II. Daily life

**Q:**From your perspective, what is the most distinctive feature of Beijing?

**Alexis Heng:**The distinctive features of Beijing are its outstanding historical sites such as the Forbidden City, Summer Palace and Great Wall.

**Q:** What would you prefer to do during your leisure time?

**Alexis Heng:**To take my family to visit many of the historical sites and tourist attractions in Beijing.

**Q:**During your stay in Beijing, have you experienced any major differences with regards to your daily life in comparison with that in Singapore?

**Alexis Heng:**In China, the major difference is that virtually all financial and non-financial transactions are carried out through smart phones. Unlike Singapore, personal computers and laptops are rarely used for this purpose. Emails are more often used in Singapore, whereas in China, Wechat is preferred. It took me some time to get used to this system of cashless and paperless transactions. But I think it is good for me, because this is what the rest of the world will be doing in the future.

When asked about his leisure time in Beijing, Alex told us about the various tourist attractions and historical sites that he and his family had visited and the many delicious traditional dishes they had tasted. Alexis Heng's daughter is also in Beijing and she is currently studying at an international school to complete her

primary education. He said that this arrangement has no influence on her studies because international schools here also offer quality and well-rounded education comparable to schools in Singapore. It seems that he and his family are adapting quite well to life in Beijing, even though he thinks traffic may be a bit crowded and weather is a little different from Singapore.



We are passionate about helping talented dental professionals like Dr. Alexis Heng take their career to the next level. We warmly welcome applications from those interested in working at our school.



# IAOMS FELLOWSHIP CENTER

## International Training Centres

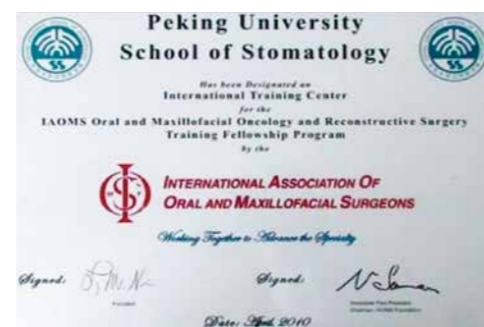
The Peking University School of Stomatology is proud to be the home of four prestigious international training centres, including IAOMS International Training Centre, based at the Department of Oral and Maxillofacial Surgery, AOCMF Fellowship Centre, based at the Department of Oral and Maxillofacial Surgery, ITI Scholarship Centre, and WHO Collaborating Centre for Research and Training in Preventative Dentistry.



*Interested clinicians are warmly encouraged to apply for training at these centres.*

The Department of Oral and Maxillofacial Surgery, Peking University School of Stomatology was designated as IAOMS (International Association of Oral and Maxillofacial Surgeons) Fellowship Center in 2010.

The department is composed of one out-patient clinic, one laser and cosmetic clinic, five wards for in-patients and one laboratory, which is equipped with 34 dental



units and 171 beds for in-patients, providing medical service for more than 115,000 out-patients and more than 7,200 cases of operations per year. The clinical treatments provided in the department are including alveolar surgery, oral implantation, head and neck oncology, oral and maxillofacial trauma, congenital development deformities, orthognathic surgery, salivary gland diseases, functional reconstruction of oral and maxillofacial defects, facial nerve diseases, oral and maxillofacial vascular malformations, and cosmetic surgery.



The department provides the one year training program on oral and maxillofacial oncology and reconstructive surgery for IAOMS fellows. They could participate in the daily activities such as didactic meeting, ward around, observation of all kinds of surgery, case discussion. The fellows would also be provided with the opportunity to assist the operation. Besides, training courses for microsurgery and reconstructive surgery are provided to the fellows weekly. The fellows would not be called for emergency at night or weekends. There are already 10 international fellows already finish the training program since 2010.

**If you have any questions, please feel free to contact with:**

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# MY LIFE AT PKU-SS

The Peking University School of Stomatology conducts China's sole 8-year combined D.M.D./Ph.D. program, accredited by the Ministry of Education of China. This program attracts high caliber students from all over China and the world, and allows them to complete both their undergraduate and postgraduate doctoral degrees at the School.

The Peking University School & Hospital of Stomatology is the nation's top institution in all oral health disciplines, and has achieved international renown. The school was rated as "A+" in the National Disciplinary Assessments. Graduates of our institution have gone on to become well-respected members of their profession. Nearly all graduates passed the National Licensing Examination, with an employability rate of almost 100%.

We offer a 3-year program for master degree and a 3-year program for doctoral degree for overseas students.



SU Huiyu's first time in Beijing, to attend the entrance examination and interview prior to my admission to the master's degree program.

I remembered that many of my friends discouraged me from going to Peking University because the medium of instruction is Chinese, but I believe it was a weak argument against the excellent track record of the university. It has been three years since I began my master's degree program at Peking University School of Stomatology (PKU-SS) and I have no regrets about my choice.

The world-class infrastructure and inspiring environment certainly enriched my learning experience. The specialized and well-equipped IAOMS Training Center and AO Fellowship Center are dedicated to regular microvascular surgery training and to teaching principles in craniomaxillofacial fixation techniques. As a top tertiary referral center in Northern China, we receive a large number of referrals and patients on a daily basis, which offers abundant and valuable hands-on training and learning opportunities for us. Despite the heavy workload, I am grateful to have the privilege of learning from my supervisor, Professor Dr. Peng Xin, together with other renowned professors.



Growing up in a tropical country, I love winter vacations and I have always looked forward to staying in a temperate country. Along with the fun side, living in Beijing during winter comes with its fair share of challenges. As the winter months set in, the days are both shorter and darker, which makes staying cozy in bed and eating warm home-cooked food so tempting, which might not be a good idea for a student



preparing for exams. Commuting in the icy-cold days with bicycle is also daunting, particularly if you forgotten your gloves, yet this is one of the most memorable experience.

Studying in Beijing, which is the capital city of China, enabled me to experience both the exciting hub of modern technological industries as well as its ancient history and culture. The



dedicated and diligent working culture is what amazes and inspires me the most. Regardless of their occupation, the people here take much pride in their work. I am also mesmerized by the richness and diversity of Beijing food culture and I especially love the Peking Roast Duck and Tanghulu.

My studying experience was however not a bed of roses and I really had to work hard at improving my command of the Chinese language. The first six months were tough and I was constantly (and still am) checking on my mobile translation app. Learning medical terminologies in Chinese

and memorizing the Chinese character strokes were the most difficult part. I remembered that there were several times that I could not pronounce or mispronounced certain words, which became the joke of the day among my fellow students. Finding the 'right words' to communicate and interpret medical jargons to patients is also a tremendous challenge, but I am thankful to have kind patients along this journey.

Being the only Malaysian student in this renowned institution is an overwhelming experience but I am blessed to have met many wonderful people who had been very helpful to me during this journey. Studying in Beijing is definitely a life-changing experience that has widened my horizons and encouraged both academic and personal growth.

**Q:** Why did you make PKU-SS as your final choice for the exchange study program? What attracted you the most?

**SU:** It all started in 2016 when I first met Professor Peng Xin. He was invited to be a visiting surgeon for our oncology and reconstruction cases in Malaysia. I was inspired by his expert knowledge and outstanding clinical skills. I did some research on different universities across the world, and found that almost none of the universities could offer hands-on training as



much as PKU-SS does. I also believe that the top rankings of PKU-SS in both Times Higher Education World University Rankings and QS World University Rankings are good indicators of the institution's high quality of teaching, research and international outlook.

**Q:** What do you think are the most abundant resources or learning opportunities in PKU-SS?

**SU:** The world class infrastructure and large number of patients provide invaluable learning and hands-on training opportunities. This is particularly important for improving my surgical skills.

**Q:** In addition to medical knowledge, what other impact did PKU-SS have on you?

**SU:** The diligent working culture and passion in research inspired and motivated me very much throughout my learning journey at PKU-SS.

**Q:** How do you feel about the medical students in PKU-SS? Do you think that there is a big difference between the daily routine of medical students in China and those in Malaysia?

**SU:** I think that the students in PKU-SS are generally very hardworking and fun-loving. The residency rou-

tine is however quite similar to ours in Malaysia.

**Q:** Can you share your daily life in PKU-SS with us?

**SU:** As a resident, I spent most of my time in the hospital. I arrive at the hospital before 7.15am for the morning ward round and perform dressings for patients every day. By 8.45am, I will be getting ready at the operating theatre to prepare surgeries that I am in charge of. Free flap surgeries may take approximately 6 to 8 hours, so our work might end late occasionally.



**Q:** Is there anything that impressed you most during your daily life and time in PKU-SS?

**SU:** It has to be the diligent and disciplined working culture.

**Q:** Can you share the story between you and the patient who sent you the token of appreciation?

**SU:** This gentleman was one of the earliest patient I had treated at PKU-SS. He suffered from neck infection following radiotherapy and I was in charge of his daily dressings. I remembered it was a Saturday night when I stayed back in hospital for my research. He presented symptoms of a sudden increase in neck swelling with dyspnea and I managed to attend to him immediately. Although it was a coincidence, he insisted on sending this token of appreciation to me.

**Q:** What is the greatest difficulty you faced after you came to China?

**SU:** The greatest challenge for me is to learn and remember the medical terminologies and drug names in Chinese.

**Q:** Have you met any difficulties with your command of the Chinese language while you were studying in China? How did you overcome them?

**SU:** Communicating with patients can be quite difficult for me and it took me some time to understand different accents initially. I often tag along and observe how the specialists and seniors communicate with the patients.

**Q:** Which medical school or city would you like to visit if you get chance? Why?

**SU:** I would still choose PKU-SS because there is possibly no other center that can offer such priceless hands-on training opportunities to their trainees.

**Q:** Will you recommend PKU-SS to other international students? Why?

**SU:** Certainly, I would strongly recommend studying at PKU-SS because of the abundant learning opportunities and the inspiring learning environment that also encourages personal growth.

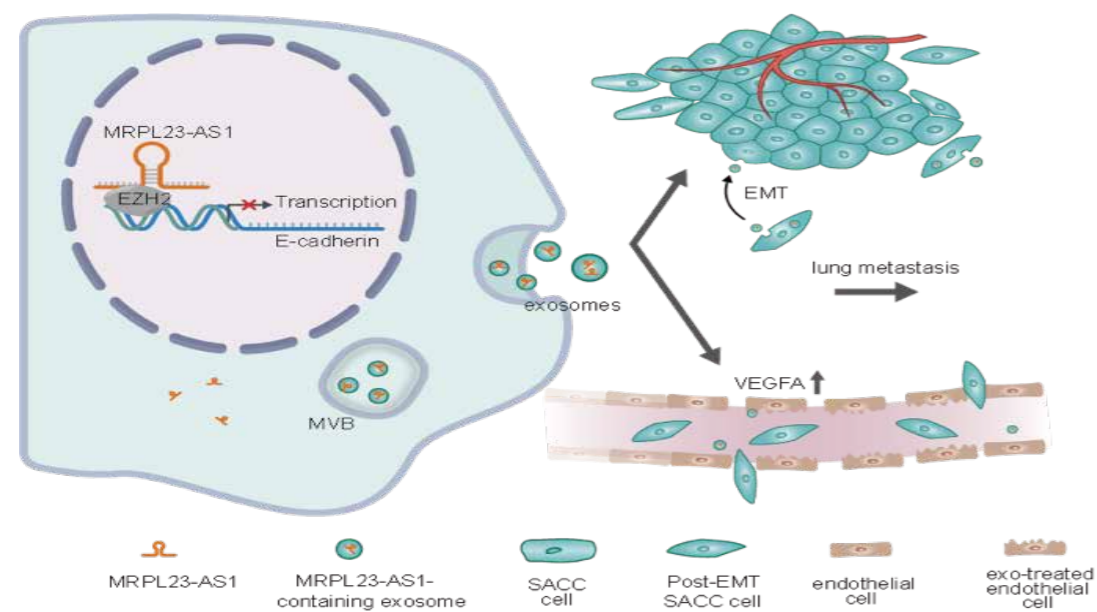


# L

## ONG NONCODING RNA MRPL23-AS1 PROMOTES ADENOID CYSTIC CARCINOMA LUNG METASTASIS



In June 2020, Associate Professor Ge Xiyuan's team published an original research article entitled "Long noncoding RNA MRPL23-AS1 Promotes Adenoid Cystic Carcinoma Lung Metastasis" in *Cancer Research*, a renowned journal in the field of cancer research. This study identified a novel metastasis-promoting lncRNA MRPL23-AS1, which mediates the transcriptional silencing of E-cadherin by forming an RNA-protein complex with EZH2. Adenoid cystic carcinoma has long been studied in our hospital for decades. In 1983, Zhang Kuihua and Li Shenglin, professors of the Oral and Maxillofacial Surgery Laboratory, established the world's first salivary adenoid cystic cancer cell line SACC-83 and lung high-metastasis cell line SACC-LM. Working with these cell lines, Ge Xiyuan's team identified several genes and proteins related to lung metastasis, and recently made significant progress in the research of non-coding RNA associated with lung metastasis.

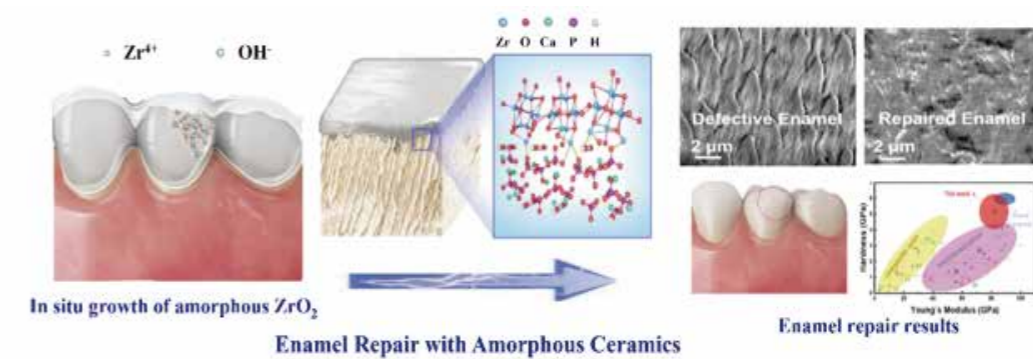


DOI: 10.1158/0008-5472.CAN-19-0819

# E

## NAMEL REPAIR WITH AMORPHOUS CERAMICS

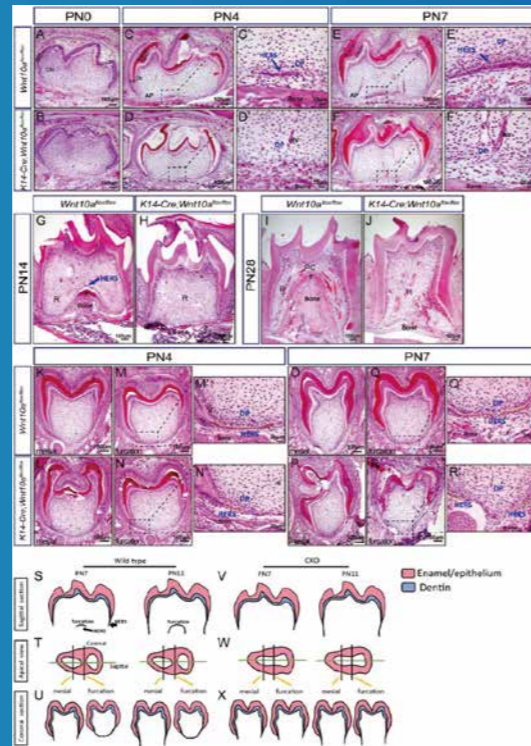
In January 2020, Prof. Deng Xuliang and Prof. Wei Yan's research team published a study entitled "Enamel Repair with Amorphous Ceramics" in *Advanced Materials*, which is one of the top journals in the field of biomaterials. This study designed and fabricated a novel material for in situ enamel repair by uniformly growing a biocompatible amorphous zirconia layer with a thickness of about 400nm on an acid-etched enamel surface. The amorphous ceramic layer could penetrate into the enamel rods to form physical anchors and chemical bonds that substantially enhanced interfacial force and stability. The mechanical properties of the repaired enamel reached the level of healthy teeth (Young's modulus: 82.5 GPa; Hardness: 5.2 GPa). Moreover, an excellent anti-bacterial activity was attained, which could effectively maintain dental health. Hence a completely novel enamel repair technique was developed, together with the fabrication of advanced biomaterials with much future clinical application potential.



DOI: 10.1002/adma.201907067

# E PITHELIAL WNT10A IS ESSENTIAL FOR TOOTH ROOT FURCATION MORPHOGENESIS

Professor Han Dong's research team published a front cover article in the Journal of Dental Research, entitled "Epithelial *Wnt10a* Is Essential for Tooth Root Furcation Morphogenesis". For the first time, they demonstrated that epithelial *Wnt10a* is essential for morphogenesis of root furcation by generating different tissue-specific *Wnt10a* knockout mice, and showing that epithelial *Wnt10a* plays a crucial role in controlling the proliferation of mesenchymal cells located adjacent to the Hertwig's epithelial root sheath. This is achieved by regulating proper mesenchymal *Wnt4* expression during root furcation morphogenesis. This study greatly enhanced our understanding of the molecular and cellular mechanisms of root morphogenesis, which may provide a solid theoretical basis for future gene therapy of dental abnormalities and bioengineered root regeneration.



DOI: 10.1177/0022034519897607

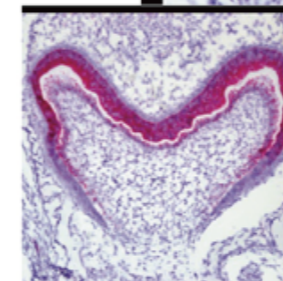


## Research Reports: Biological

# Epithelial *Wnt10a* Is Essential for Tooth Root Furcation Morphogenesis

M. Yu<sup>1\*</sup>, Y. Liu<sup>1\*</sup>, Y. Wang<sup>1</sup>, S.W. Wong<sup>2</sup>, J. Wu<sup>1</sup>, H. Liu<sup>1</sup>, H. Feng<sup>1</sup>, and D. Han<sup>1</sup>

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### ABOUT THE COVER

Expression pattern of *Wnt10a* during tooth root development and altered proliferation in dental epithelial and mesenchymal cells of *K14-Cre;Wnt10a<sup>lox/lox</sup>* mice. RNAscope in situ hybridization of *Wnt10a* is shown with positive staining in red dots, on coronal sections of the central root furcation region of M1 from wild-type mice at postnatal day 2.

For more details, see pages 311-319.



