FROM THE ARCHIVE

From the archive: University of Bristol dental student society

(Transcribed from *Br Dent J* 1924; 45: 267)

The third annual dinner of the dental student society of Bristol University was held at the Royal Hotel, Bristol, on Thursday January 24th 1924. Mr. W. R Ackland MRCS MDS Bristol was the guest of the evening. Mr. Clifford Wing, President of the Society being in the chair. Amongst those present were Professor E. Fawcett (Dean of the Faculty of Medicine), Mr. F. C. Nichols (Dental Surgeon to the Bristol Royal Infirmary), Mr. L. E. Claremont (Dental Surgeon to the Bristol General Hospital), Colonel G. A. Peake (Cheltenham) and Dr. O. C. M. Davis (Lecturer in Medicine to Dental Students), Mr. P.H. Lewis, Mr. A.R Wilcox, Mr. C.T. Kelsey and Mr. B.F. Robinson (Student President).

After the loyal toast the Student President proposed the health of the 'Guests of the evening'. He said the pleasure of having Mr Ackland as a guest was tinged with regret by the fact that he was no longer with them in an official capacity. The speaker referred to the enormous interest Mr. Ackland had always shown to the dental school and concluded by wishing him the best of everything in his retirement.

Colonel Peake, the oldest past student, spoke in support of the toast and related the enormous improvement in the school since Mr. Ackland's advent in 1888. At the close of the speech Colonel Peake presented to Mr. Ackland, amidst great enthusiasm, a silver salver inscribed:

By the staff and past and present students as a token of their esteem and gratitude for his valuable services to the dental school or Bristol University from 1888 to 1923.

Mr. Ackland in reply, said it was a shock to him not to be going to the Infirmary after his long spell of 35 years. He expressed his gratitude at having had some part in the formation of the new dental department at the infirmary and spoke of the many advantages in the association of the students with the university which he looked upon as a wonderful club. Concluding he said he could find no words to thank everyone for their appreciation of what he had done.

Ed's note: With thanks to Emeritus Professor C. D. Stephens OBE, who has pointed out that one of the guests at the above event, Lt Colonel Peake LDSRCS Eng, was remarkable as among other things he personally raised men for four companies of Railway Engineers for service in the First World War building railways in N France and Salonika:113th (Railway) Company Royal Engineers, 114th (Railway) Company Royal Engineers, 270th (Railway) Companies Royal Engineers, 271st (Railway) Companies Royal Engineers. For more information see https://www.longlongtrail.co.uk/army/regiments-and-corps/the-corps-of-royal-engineers-in-the-first-world-war.

Research could help young people born with cleft lip and palate achieve best outcomes

Cleft lip and/or palate is a lifelong condition affecting one in 700 births. A new research programme, led by the University of Bristol and thanks to funding of nearly £2 million by the National Institute for Health and Care Research (NIHR), will investigate how ethnicity, sex, socio-economic status, health literacy and geography affect outcomes for young adults born with a cleft. The findings will establish how to address this variation and ensure that all young adults have the same chance of achieving the best possible outcomes.

Children born with a cleft will often have multiple surgeries as well as other treatments from speech and language therapists, dentists, specialist nurses, audiologists and psychologists as they grow and develop. As they reach adulthood, individuals vary in their appearance, their speech and their wellbeing but there is limited information about how they vary. Currently, it is not known if some groups routinely do better or worse than others.

Yvonne Wren, Professor of Speech and Communication at the Bristol Dental School, Chief Investigator of the Cleft Collective and lead for the project, said: 'Individuals born with cleft lip and/or palate are well supported in the UK as they progress through childhood. But some young adults have told us they find it challenging when they move from the regular monitoring they received as children, to adulthood where they are responsible for their own care.

'At the moment, we don't know enough about who is affected in this way and have limited information to guide us in terms of what support is needed. This research will help us understand more about who needs ongoing support and what their needs are. We will use this information to determine how to help those who need it and enable them to achieve best outcomes.'

There are four research projects within Cleft@18-20. Clinics will be run with the 16 regional cleft centres across the UK to find out how well young adults with cleft lip and/or palate are doing in relation to their appearance, speech, eating and drinking, hearing, teeth, wellbeing, quality of life and education. Researchers will use this information to report on any needs which are identified and how these vary for different groups based on ethnicity, household income, sex and gender and geographical location.

In the second project, the research team will interview young adults with cleft lip and/or palate to understand more about their perspective on their outcomes and what would help them.

In the third project, young adults and professionals who work in regional cleft centres will be asked what they consider represents good results of cleft care as young people affected reach adulthood.

Finally, researchers will work together with young adults to develop and try out a new support tool which will be designed to help them self-manage their needs when they can, or access specialist care.

A panel of young adults born with cleft lip and/or palate from a range of backgrounds will be recruited to help oversee Cleft@18-20 and work with a larger group to help with plans for the interviews and the development of the support tool.

The research study 'Improving outcomes by addressing variation in unmet needs at transition to adult care for young people born with cleft lip and palate – Cleft@18-20' has been awarded funding of £1,978,946.79 by NIHR. The five-year project, led by Professor Yvonne Wren, will begin in April 2024.

'Artificial tongue' detects and inactivates common mouth bacteria

Researchers reporting in *ACS Applied Materials & Interfaces* have designed a chemical sensor array, or 'artificial tongue', that distinguishes dental bacteria and can inactivate them.[1]

When bacteria are suspected as the agent behind dental disease, such as cavities or periodontitis, the first step is to identify the source. Traditional detection and identification methods can involve culturing or looking for specific DNA markers belonging to different species using sophisticated equipment. So, Na Lu, Zisheng Tang and coworkers wanted to investigate a simple and less expensive alternative: sensor arrays known as electronic or artificial tongues. Previously developed artificial tongues have detected and measured several types of bacteria, similar to how a real tongue can taste multiple flavours at once. And the researchers wanted to add in the capability of reducing the effects of, or inactivating, the identified dental bacteria.

The researchers turned to a nanoscopic particle that mimics natural enzymes, called a nanozyme, and made them from iron oxide particles coated in DNA strands. When hydrogen peroxide and a colourless indicator were added in solution, the presence of nanozymes caused the indicator to turn bright blue. However, bacteria that adhered to the DNA decreased the nanozyme's reactivity, reducing the amount of blue colour produced. The researchers coated nanozymes with different DNA strands so that each type of bacteria could be linked to a unique change in colour signals. To test the DNA-nanozyme system, as an artificial tongue, the researchers created samples of 11 different dental bacteria species. The sensor array was able to identify all the bacteria in artificial saliva samples. Then, using the DNA-encoded nanozyme sensor array, the researchers were able to distinguish whether a dental plaque sample came from a healthy volunteer or from a person with cavities.

In addition, the DNA-encoded nanozyme sensor array had antibacterial effects on the dental bacteria species tested. Compared to controls without the nanozymes, three typical bacterial species were inactivated in solutions containing the nanozyme system. Scanning electronic microscopic images suggest to the researchers that the nanozyme system destroyed the bacteria membranes. They suggest that this sensor system could also be used in the future to diagnose and treat bacterial dental diseases.

References

1. Zhang L, Qi Z, Yang Y, Lu N, Tang Z. Enhanced 'electronic tongue' for dental bacterial discrimination and elimination based on a DNA-encoded nanozyme sensor array. *ACS Appl Mater Interfaces* 2024; **16:** 11228–11238.