

# 2024 Homecoming



LOMA LINDA UNIVERSITY  
School of Dentistry

## LLUSD Student Poster Competition



*March 1, 2024*



LOMA LINDA UNIVERSITY

School of Dentistry

**Welcome to the 2024 LLU Homecoming Research Poster Exhibition!**

This is the time to celebrate one united alumni weekend and share the exciting results of our amazing student researchers!

The poster session includes a total of 35 projects that have been categorized into 5 sections.

The program book outlines,

1. Poster Competition Schedule and Awards
2. Poster Competition Judges
3. Poster Event Student Volunteers
4. DH & DDS Student Research Mentors
5. Poster Title and Authors by Section
6. Poster Abstracts
7. Poster Competition Judge Form



## POSTER COMPETITION SCHEDULE AND AWARDS

	Advanced Education	DH Students (Clinical & Community)	Dental Students (Clinical, Scientific & Community)
<b>Date</b>	Friday March 1, 2024		
<b>Poster Session Venue</b>	Centennial Complex 4 <sup>th</sup> Floor		
<b>Time</b>	8:00 AM - 11:30 AM		
<b>Judging</b>	8:00 - 11:30 AM		
<b>Awards Ceremony</b>	<b>Friday March 1, 2024 at 1:00 – 2:30 PM (Prince Hall Amphitheatre 1101/1102)</b>		
<b>1<sup>st</sup> Place</b>	\$600.00	\$600.00	\$600.00
<b>2<sup>nd</sup> Place</b>	\$300.00	\$300.00	\$300.00
<b>3<sup>rd</sup> Place</b>	\$150.00	\$150.00	\$150.00
<b>AADOCR/Dentsply Sirona Award</b>	Award to honor the individual selected to represent LLUSD at the 2025 AADOCR/SCADA Program in New York, NY March 12-15, 2025.		
<b>2024 Student Research Mentor of the Year (DDS/DH)</b>	The award recognizes faculty or staff who have demonstrated a longstanding commitment to mentoring students that align with LLUSD’s mission.		
<i>(\$6,300.00)</i>			

## POSTER COMPETITION JUDGES

DH & General	General and DDS Clinical	DDS Clinical and Community	DDS Community and Scientific	DDS Scientific and DH
Dr. Raghad Sulaiman	Dr. Soh Yeun Eileen Kim	Dr. Nima Sarmast	Dr. Jaimee Lozada	Dr. Alan Herford
Dr. Ryan Becker	Dr. Gina Roque Torres	Dr. Shivani Karre	Ms. Danielle Ellington	Dr. James Kang
Dr. Richard Gray	Dr. John Won	Dr. Natalie Hohensee	Dr. Manoochehr Parsi	Ms. Larysa Baydala
Ms. Leticia Lenoir	Dr. Alireza Hayatshahi	Dr. Rami Jekki	Dr. Balsam Jekki	Dr. Susan Roche
Dr. Anupama Grandhi		Dr. Zina Johnston		Ms. Esther Forde
<i>(N=23)</i>				

## POSTER EVENT STUDENT VOLUNTEERS

Registration	Greeters & Crowd Control	Judge Form Organizers	Photo Booth	Set-up & Clean-Up
Samantha Belenson	Andrew Nguyen	Carl-El Semerzier	Judy Chu	Raphael Garcia
Lan Le	Johnisha Butler	Navuen Alamawi	Chandler Phelps	and all others
Elianna Srikureja	Anilu Che	Kausar Khan	Stephen Patterson	
Anthony Naranjo	Jeremy Oh	Valerie Cu	Manal Usmani	
<i>(N=17)</i>				

## DH & DDS STUDENT RESEARCH MENTORS

DGD	PERIO, ENDO, PEDS & IMPLANT	DH	CDR	Educational Services and Others
Dr. So Ran Kwon	Dr. Ahmed Khocht	Ms. Shelley Hayton	Dr. Gina Roque Torres	Dr. Udochukwu Oyoyo
Dr. Houda Tebcherany	Dr. Suhair Jambi	Ms. Danielle Ellington	Ms. Mary Campbell Beachler	Dr. Erin Hicks
Dr. Steven Powell	Dr. Tory Silvestrin			Dr. Holli Riter
Dr. Tara Khamo	Dr. Richard Gray			Dr. Alireza Hayatshahi
Dr. Soh Yeun Kim	Dr. Samah Omar			Dr. Ryan Sinclair
Dr. Sunee Limmeechokchai	Dr. Joseph Kan			Dr. Franklin Garcia-Godoy
Dr. Raghad Sulaiman				
Dr. Margaret Soh				
Dr. Perry Burtch				
Dr. Justin Terrill				
Dr. Ryan Becker				
Dr. Sasiya Bhumpattarachai				
Dr. Hung-Chi Liao				
Dr. John Won				
Dr. Kiddee Poomprakobsri				
Dr. Vincent Chee				

*(N=32)*

## DH CLINICAL & COMMUNITY SECTION

Poster 24001

**The Student Research Program at Loma Linda University School of Dentistry**

*So Ran Kwon\* & Udochukwu Oyoyo\**

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24002 DH CLIN

**Relationship between Salivary Diagnostics and Gingival and Plaque Index**

*Madeleine Rivera\*, Heidi Mendoza\*, Ashlynn Montgomery\*, Gabriella Villegas\*, Alisa Andrade\*, Shelley Hayton, Udochukwu Oyoyo, So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24003 DH CLIN

**Effectiveness of Herbal Mouthrinse in Inhibiting Oral Bacteria: An In Vitro Study**

*Clarice Aghajanian\*, Stephanie Alameddine\*, Sohee Chung\*, Karla Gomez\*, Lindsey Quartuccio\*, Danielle Ellington, Mary Campbell Beachler, So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24004 DH CLIN

**Antibacterial Effect of Gold and Silver Coated Toothbrushes**

*Kaylee Ramos\*, Christina Batarseh\*, Natalie Ramos\*, Lesly Munoz\*, Elida Isquierdo Pizen\*, Mary Campbell Beachler, Udochukwu Oyoyo, So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24005 DH COM

**The use of Chat GPT AI in Writing Research Proposals**

*Alhassan Alkhafaji\*, Matthew Jung\*, Zhihao Li\*, Taylor Romero\*, Angela Villapudua\*, Udochukwu Oyoyo, So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24006 DH COM

**Efficacy of Natural Teeth Whitening Remedies: Banana and Pineapple**

*Camille Davalos\*, Cristina Fecue\*, Stephanie Lee\*, Desiree Mercado\*, Nadia Rahgozar\*, Udochukwu Oyoyo, So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

## GENERAL & ADVANCED EDUCATION SECTION

Poster 24007 ADV EDUC

**Abnormal anatomy of the maxillary first molar, a case review**

*Isaac Covarrubias\* & Zixuan Liu\**

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24008 ADV EDUC

**Oral Manifestations of Adolescent B-Cell Lymphoblastic Lymphoma: A Case Report**

*Berenice Cheng\*, Cheryl Bhatt, Samah Omar, Jung-Wei Chen*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24009 ADV EDUC

**Management of Horizontal Root Fracture in Permanent Teeth**

*Joseph Uhm\* & Charlie Kim\**

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24010 ADV EDUC

**Tooth Avulsion: A Case Report**

*Farin Ezzati\*, Alina Ricalde, Jung-Wei Chen, Samah Omar*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24011 ADV EDUC

**Dental Pulp Preservation in the Management of Bilateral Dens Evaginatus**

*Ethan Do\* & Jeff Buizastraw*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24012 ADV EDUC

**Nasal Alveolar Molding appliance in patient with Van der Woude syndrome**

*Yu-Chen Cheng\*, Jungyi Alexis Liu, Samah Omar, Jung-Wei Chen*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24013

**Student perception of an evidence-based teaching approach**

*Houda Tebcherany\* & Ahmed Khocht*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24014

**Reflections on the Implementation of ADEX Mock Exam at LLUSD**

*Reema Younan\*, Ryan Becker, Richard Gray, Scott Lee, Amelia David, So Ran Kwon, John Won, Mark Estey*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24015

**Esthetic Dental Rehabilitation in 73-Year Old Male**

*Kristina Padilla\**

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24016

**A Case Report of a Tooth with Dens Evaginatus and Dens Invaginatus**

*Salem Sayegh\*, Meagan Miller, Anupama Grandhi*

Loma Linda University School of Dentistry, Loma Linda, CA

## DDS CLINICAL SECTION

Poster 24017 DDS CLIN

**Oral Health Care Providers' Awareness and Perception of Salivary Diagnostics**

*Matthew Cosaert\*, Nathan Hold\*, Filmon Kifle\*, Jordan Mar\*, Steven Powell, Udochukwu Oyoyo, So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24018 DDS CLIN

**The Effect of Face Mask Wearing on Breath Malodor**

*Thang Ngo\*, Savanna Sanchez\*, Joshua Ventenilla\*, Jonathan Lee\*, Tara Khamo, Udochukwu Oyoyo, So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24019 DDS CLIN

**Impact of Dental Insurance Coverage on Periodontal Maintenance Compliance**

*Emily Kim\*, Da Eun Jung\*, Jenny Tran\*, Si Jie Ma\*, Noah Poole\*, Houda Tebcherany, Ahmed Khocht, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24020 DDS CLIN

**Patients treated at Loma Linda University School of Dentistry Special Care Department**

*Isabella Idea\*, Kaythi Nyein\*, Andrea Oh\*, Holli Riter, Eileen Soh Yeun Kim, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24021 DDS CLIN

**Assessment of Dry Mouth Using the Modified Schirmer Test vs Unstimulated Salivary Flow Testing**

*Jingwei Cai\**, *Ire Ju\**, *Rylan Jones\**, *Samuel Madden\**, *Franklin Garcia-Godoy*, *Udochukwu Oyoyo*, *So Ran Kwon*  
Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24022 DDS CLIN

**Patients' satisfaction and acceptance on the use of 2.5% vs 5% sodium fluoride topical varnish**

*Luciana Marquart\**, *Lynn Harash\**, *Yaser Abu Tabra\**, *Sarah Gill\**, *Udochukwu Oyoyo*, *So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24023 DDS CLIN

**Effects of Repeated Instrumentation and Sterilization on the Cutting Efficiency of Nickel-Titanium Endodontic Rotary Files**

*Youngchan Kim\**, *Maria Mikhaylishin\**, *Suhair Jambi*, *Sunee Limmeechokchai*, *Udochukwu Oyoyo*, *Tory Silvestrin*

Loma Linda University School of Dentistry, Loma Linda, CA

## DDS COMMUNITY SECTION

Poster 24024 DDS COM

**Outcomes of Utilizing ChatGPT 3.5 in Writing Graduate Level Research Proposals**

*Haydan Godfrey\**, *Michelle Chan\**, *Nathaniel Liu\**, *Udochukwu Oyoyo*, *So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24025 DDS COM

**Self-confidence of DDS Graduates of LLUSD in Performing Root Canal Treatments**

*Andrew Robinson\**, *Alan Machado\**, *Jeffrey Middleton\**, *Zachary Evangelista\**, *Richard Gray*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24026 DDS COM

**Blue Zone Loma Linda: The Relationship between Lifestyle and Oral Health Profile**

*James Akkidas\**, *Antervir Kaur\**, *Sadaf Taheri\**, *Gaurav Sood\**, *Julia Ko*, *Raghad Sulaiman*, *Udochukwu Oyoyo*, *So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24027 DDS COM

**Survey on Dental Procedural Bleeding Management in Patients on Anticoagulants and Antiplatelets**

*Seth B Kroll\**, *Christian Mata-Padilla\**, *Elizabeth Maymoun\**, *Nathan H Nguyen\**, *Udochukwu Oyoyo*, *Erin Hicks*,

*Alireza Hayatshahi*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24028 DDS COM

**Survival rate of posterior composite restorations at a Southern California Dental School**

*Anand Shah\**, *Himani Radadiya\**, *Shreya Manocha\**, *Holli Riter*, *Udochukwu Oyoyo*, *So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24029 DDS COM

**Perceived Satisfaction and Ergonomic Benefits Among Dental Loupe Users**

*Sihwan Sung\**, *Jude Ritheesh Roy\**, *Humaira Samreen\**, *Dianne Viktoria Torres\**, *Mahytab Zaky\**, *Perry Burtch*, *Udochukwu Oyoyo*,  
*So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

## DDS SCIENTIFIC SECTION

Poster 24030 DDS SCIEN

**Seating Length at Which Dental Acorn Acrylic Burs Experience Failure**

*Blake Unsell\**, *Justin Terrill*, *Ryan Becker*, *Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24031 DDS SCIEN

**Accuracy of Shade Detection with Trios Intraoral Scanner**

*Jonathan Ilagan\*, Seungho Park\*, Yi Xie\*, Yiyang Ning\*, Hung Chi Liao, Vincent Chee*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24032 DDS SCIEN

**Effects of Tightening Protocol on Position Changes of Screw-Retained Single Implant Crowns**

*Hui Ju Wu\*, Hui Ling Wu\*, Sasiya Bhumpattarachai, Hung-Chi Liao, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24033 DDS SCIEN

**Accuracy of Partial and Complete-Arch Analog and Digital Impressions: An In-Vitro 3D Analysis**

*Jeremy Chieng\*, Daniel Lee\*, Nicole Lim\*, Sydney Yu\*, Joseph Kan, Sunee Limmeechokchai, Udochukwu Oyoyo, John Won*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24034 DDS SCIEN

**Efficacy of Various Noise Cancelling Devices: In-Vitro Study**

*Kanush Chand\*, Sejal Sidhu\*, Maria Carvalho\*, Ryan Sinclair, Udochukwu Oyoyo, So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

Poster 24035 DDS SCIEN

**Effect of Spaceflight on Mouse Incisor Tooth Morphology by MicroCT Analysis**

*Jessica Ayoub\*, Mina Hanna\*, Julianne Magakat\*, Nadine Tawfik\*, Gina Roque-Torres*

Loma Linda University School of Dentistry, Loma Linda, CA

\*Poster Presenters



## POSTER ABSTRACTS

### Poster 24001

#### **The Student Research Program at Loma Linda University School of Dentistry**

*So Ran Kwon\* & Udochukwu Oyoyo\**

Loma Linda University School of Dentistry, Loma Linda, CA

Scientific research is a vital driving force for health professions education and practice that pave the way for evidence-based decision making. LLUSD has always been a frontier in creating an environment to foster student research opportunities thus aiming to meet our mission “To make man whole” by integrative teaching, service, and research. Dental and dental hygiene students who are interested in conducting research are encouraged to select a topic in the area of clinical, basic sciences, or community research.

As part of this program, we aim to,

- 1) Instill critical thinking through research experience;
- 2) Foster collaboration between students and faculty mentors that encourages students to become involved in the design, conduct, and reporting of research;
- 3) Encourage students to consider academic dentistry and research as future career options.

**Keywords:** Student Research Program

### Poster 24002 DH CLIN

#### **Relationship between Salivary Diagnostics and Gingival and Plaque Index**

*Madeleine Rivera\*, Heidi Mendoza\*, Ashlynn Montgomery\*, Gabriella Villegas\*, Alisa Andrade\*, Shelley Hayton, Udochukwu Oyoyo, So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To assess the relationship between salivary diagnostics and Loe & Silness Gingival index and Turesky’s Modified Plaque Index (PI).

**Methods:** Subjects (N=50) meeting the inclusion criteria were enrolled. Subjects were asked to spit saliva into the test tube and an examiner performed the GI and PI measurements. The saliva test specimens were processed in the lab and results were made available the next day. Non-parametric correlation analysis was used to test relationship between the key pathogen levels and GI and PI.

**Results:** Participants consisted of 32 females and 18 males. The mean GI and PI was 1.31 and 2.56, respectively. A moderate negative correlation was observed between GI and *Fusobacterium nucleatum* (Fn) levels ( $p=0.030$ ). There a was a moderate positive correlation between PI and total pathogen count ( $p=0.015$ ).

**Conclusions:** We conclude that the severity of PI may be an indicator of key pathogen load in the saliva.

**Keywords:** Loe & Silness Gingival Index, Turesky’s Modified Plaque Index, Salivary Diagnostics, Key Pathogens

### Poster 24003 DH CLIN

#### **Effectiveness of Herbal Mouthrinse in Inhibiting Oral Bacteria: An In Vitro Study**

*Clarice Aghajanian\*, Stephanie Alameddine\*, Sohee Chung\*, Karla Gomez\*, Lindsey Quartuccio\*, Danielle Ellington, Mary Campbell Beachler, So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To compare antibacterial effect of different mouth rinses.

**Methods:** Samples tested were Hello mouthwash, Melaleuca Essential Oil Breath Away and Chlorhexidine. In the top left quadrant, there is a negative control of dH<sub>2</sub>O. The other 3 quadrants will have mouthwash samples. Plates were placed in a 37 °C incubator for >18 hours, not counting the time after plating and before incubating.

**Results:** The zone of inhibition was observed in the Chlorhexidine and Hello Mouth wash at all three dilutions of *E. Faecalis* ( $10^{-6}$ ,  $10^{-5}$ , and  $10^{-3}$ ). The zone of inhibition for Hello mouthwash was approximately 10 mm in diameter, while the Zone of inhibition for Chlorhexidine was consistently greater. No zone of inhibition was observed for distilled water and the Melaleuca essential oil mouthwash.

**Conclusions:** This study's findings imply that herbal mouth rinses are not as effective against microbes as 0.2% chlorhexidine gluconate.

**Keywords:** *Enterococcus faecalis* bacteria, herbal mouth rinse, chlorhexidine

Poster 24004 DH CLIN

**Antibacterial Effect of Gold and Silver Coated Toothbrushes**

*Kaylee Ramos\**, *Christina Batarseh\**, *Natalie Ramos\**, *Lesly Munoz\**, *Elida Isquierdo Pizen\**, *Mary Campbell Beachler*, *Udochukwu Oyoyo*, *So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To evaluate the antibacterial effect of conventional nylon toothbrushes compared to silver and gold coated toothbrushes.  
**Methods:** The laboratory study involved the use of *E. Faecalis* that was grown and contaminated on three types of toothbrushes: Oral-B toothbrush, Nano-B Silver toothbrush; and Nano-B gold toothbrush. Upon contamination bristles were dried and immersed in PBS after 1 and 8 hours and placed onto agar plates. Colonies by groups were counted the next day. One-way ANOVA was used to test difference in colony counts among the three groups followed by post-hoc Bonferroni pairwise comparisons. All tests were performed with Jamovi statistical software at a significance level of 0.05.  
**Results:** Oral B had a significant higher mean colony count/SD (6.17/5.35) compared to Silver (2.71/1.99) and Gold (1.42/1.10),  $P < .001$ .  
**Conclusions:** We conclude that gold or silver coated toothbrushes may be effective in reducing bacterial load after 1 hour.  
**Keywords:** Titanium dioxide nanofibers, oxidation, nano materials

Poster 24005 DH COM

**The use of Chat GPT AI in Writing Research Proposals**

*Alhassan Alkhafaji\**, *Matthew Jung\**, *Zhihao Li\**, *Taylor Romero\**, *Angela Villapudua\**, *Udochukwu Oyoyo*, *So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

**Objective:** Evaluate ChatGPT's impact on research proposal writing quality.  
**Methods:** DDS and DH Students wrote three research proposals: A was crafted without assistance from ChatGPT. For B students input A into ChatGPT 3.5 with the same prompt. C synthesis ideas from A and B. Time taken was recorded for each proposal, and these were evaluated using a rubric by blinded examiners to assess their quality. ANOVA analyzed score differences by proposal type post-data compilation, while Pearson correlation coefficients calculated two reviewers' agreement. Hypothesis tests were set at  $p < 0.05$ .  
**Results:** 45 proposals were reviewed, with significantly varied write-up times and distributions ( $p < 0.001$ ). Average score was  $9.7 \pm 1.8$ , with no significant differences between proposal types or sections. Strong positive correlations existed between reviewers ( $p < .001$ ).  
**Conclusions:** ChatGPT didn't enhance proposal quality, suggesting underutilization. As AI integrates into education, effective use is vital. Despite limitations, ChatGPT didn't improve the proposal quality.  
**Keywords:** Chat GPT, AI, proposals

Poster 24006 DH COM

**Efficacy of Natural Teeth Whitening Remedies: Banana and Pineapple**

*Camille Davalos\**, *Cristina Fecce\**, *Stephanie Lee\**, *Desiree Mercado\**, *Nadia Rahgozar\**, *Udochukwu Oyoyo*, *and So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To assess how effective fruit-based whitening remedies are in comparison to at-home teeth whiteners.  
**Methods:** Human molars (N=64) were embedded and placed in artificial saliva: Experimental Groups consisted of, NC: Control consisting of immersion in water for 5 minutes; PA: Rubbing teeth with pineapple core for 5 minutes; BA: Rubbing teeth with banana peel for 5 minutes; HW: 10% carbamide peroxide in custom-fitted tray for 8 hours. All groups were treated for 10 days and consisted of 16 specimens. Kruskal-Wallis test was used to assess difference among groups at  $\alpha = 0.05$ .  
**Results:** Lightness and chroma measured at 1-day and 1-week post whitening indicated a statistically significant difference among the groups ( $P < 0.001$ ). Only HW and PA showed an increase in lightness and decrease in chroma. Overall color change was highest for HW followed by PA, BA, and NC.  
**Conclusions:** At-home whitening is most effective in creating tooth color change.  
**Keywords:** Pineapple, Banana, Natural Whitening, At-home Whitening

Poster 24007 ADV EDUC

**Abnormal anatomy of the maxillary first molar, a case review**

*Isaac Covarrubias\** & *Zixuan Liu\**

Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To present a case of bilateral abnormal canal anatomy of the first maxillary molar.

**Lit Review:** Costa et al. identified a significant association between missed canals and development of apical periodontitis. Vertucci et al. Hess et al. Weine et al. and Kutler et al. studied the incidence of the number of canals in maxillary molars with differing results.

**Case:** A 72-year old female was referred to the Graduate Endodontic clinic for evaluation and treatment of teeth #3, 14. Radiographic examination shows both teeth have a history of prior endodontic treatment. Initial examination revealed additional canal space on #3. A limited FOV CBCT for #3 and #14 showed uninstrumented canal space in the palatal root of both maxillary molars. Retreatment was completed through the existing crowns of the teeth without complication.

**Conclusion:** CBCTs allow for improved diagnostic ability. They allow for better case selection and possibly increased success.

**Keywords:** CBCT, abnormal anatomy, endodontic treatment

Poster 24008 ADV EDUC

### **Oral Manifestations of Adolescent B-Cell Lymphoblastic Lymphoma: A Case Report**

*Berenice Cheng\*, Cheryl Bhatt, Samah Omar, Jung-Wei Chen*

Loma Linda University School of Dentistry, Loma Linda, CA

**Case:** Pediatric dentists play an important role in the management of oncology patients. B-cell Lymphocytic Lymphoma (BLL), one such condition, has key oral manifestations that may be subclinical or asymptomatic. This case highlights salient oral manifestations of BLL, a relatively rare diagnosis amongst adolescents. A 13-year-old was referred to the Loma Linda University Pediatric Dentistry team for orthodontic bracket removal days after BLL diagnosis. Comprehensive clinical and radiographic examination incidentally revealed advanced, extensive bimaxillary osteolytic lesions with periodontal sequelae. Given nearly 75% of the patient's permanent dentition was involved, diagnostic identifiers helped distinguish this patient's secondary non-Hodgkin's Lymphoma lesions from differential diagnoses including primary lymphoblastic lymphoma, Langerhans Cell Histiocytosis and simple bone cyst lesions; diagnoses that would have necessitated more aggressive resection and extraction. This report underscores the importance of understanding definitive diagnosis of non-odontogenic maxillofacial pathology, as well as screening considerations for pediatric dentists that could contribute to earlier diagnosis.

**Keywords:** B-cell Lymphocytic Lymphoma, Leukemia, Langerhans Cell Histiocytosis, Blood Cancer, Lesions

Poster 24009 ADV EDUC

### **Management of Horizontal Root Fracture in Permanent Teeth**

*Joseph Uhm\* & Charlie Kim\**

Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To showcase clinical management of horizontal root fracture in a permanent incisor

**Review of Literature:** Endodontic treatment after horizontal root fracture is not recommended until bacterial invasion has been confirmed. MTA obturation is ideal in these cases due to superior sealing and biocompatibility. Andreasen et al., classified four types of healing. This case report describes the use of vitapex and MTA in the multidisciplinary management of a patient with horizontally fractured central incisor.

**Case:** A 10yo male presents with horizontal root fracture in the middle third. The tooth remained asymptomatic through 3 months, then buccal abscess developed. Tooth #8 was medicated with vitapex for one month. Upon healing of the abscess, MTA obturation was completed to the fracture line.

**Conclusion:** Short term calcium hydroxide followed by MTA obturation showed good outcomes when used in the treatment of a horizontally fractured central incisor.

**Keywords:** Horizontal Root Fracture, Vitapex, Mineral Trioxide Aggregate (MTA)

Poster 24010 ADV EDUC

### **Tooth Avulsion: A Case Report**

*Farin Ezzati\*, Alina Ricalde, Jung-Wei Chen, Samah Omar*

Loma Linda University School of Dentistry, Loma Linda, CA

**Case:** Tooth avulsion, or dental avulsion, refers to the complete displacement of a tooth from its socket in the alveolar bone, usually due to trauma. It is considered one of the most traumatic dental injuries and requires immediate attention. The treatment of avulsed teeth is complex and depends on various factors such as the extraoral time, storage medium, and the condition of the tooth and supporting tissues. Immediate care for an avulsed tooth includes gentle cleaning, repositioning the tooth in its socket if possible, and

seeking dental care as soon as possible. The long-term treatment may involve root canal treatment, splinting, and follow-up care. The prognosis of avulsed teeth can be influenced by several factors, and the success rate is higher when the avulsed teeth are kept under wet conditions and replanted without delay. This case will be presented along with a discussion of the procedure performed, the results, and conclusion.

**Keywords:** Avulsion, Reimplantation, Success rate,

Poster 24011 ADV EDUC

**Dental Pulp Preservation in the Management of Bilateral Dens Evaginatus**

*Ethan Do\* & Jeff Buizastraw*

Loma Linda University School of Dentistry, Loma Linda, CA

**Case:** Dens evaginatus (DE) is a relatively rare dental anomaly, historically more common among Asians, Alaska Natives, Inuit, and American Indians. Patients with DE face numerous complications, including tubercle fracture leading to pulp exposure, infection, and necrosis. In this case report, we present an approach to managing a notable case of bilateral dens evaginatus through a pulp preservation technique. A 16-year-old male patient of Latin American descent presented with pulp necrosis and chronic apical abscess affecting his maxillary premolars. Rather than employing the standard root canal therapy protocol, treatment exclusively relied on sodium hypochlorite, calcium hydroxide, and mineral trioxide aggregate to preserve the remaining pulp tissue. One month follow-up revealed resolution of clinical pain and sinus tract. Subsequent radiographic assessments through six months showed substantial healing of the periapical region. Our findings highlight the potential effectiveness of pulpal preservation in ensuring the long-term health and functionality of the affected teeth.

**Keywords:** Dens Evaginatus, Odontoblasts, Pulp Preservation, Regenerative Endodontics

Poster 24012 ADV EDUC

**Nasal Alveolar Molding appliance in patient with Van der Woude syndrome**

*Yu-Chen Cheng\*, Jungyi Alexis Liu, Samah Omar, Jung-Wei Chen*

Loma Linda University School of Dentistry, Loma Linda, CA

**Case:** Van der Woude is an autosomal dominant human craniofacial disorder with high penetrance (80% to 100%), commonly caused by mutations in the *IRF6* gene. The incidence is 1 to 2.5 per 100,000, with the most common features being lower lip pits and cleft lip/palate. Van der Woude syndrome represents the most common form of syndromic cleft lip/palate, leading to feeding difficulty, speech problems and dental anomalies.

A 2-month-old male presented to the clinic with a complete bilateral cleft lip and palate and lower lip pits. Six family members exhibit varying degrees of cleft lip and palate, and/or lower lip pits. We used the Presurgical Nasal Alveolar Molding (PNAM) appliance with taping, aiming to approximate alveolar segments and enhance symmetry in both soft and hard tissues. The effectiveness of PNAM appliance and the outcomes of the cleft lip and palate treatment will be presented.

**Keywords:** Van der Woude syndrome, Cleft lip and palate, Presurgical Nasal Alveolar Molding (PNAM)

Poster 24013

**Student perception of an evidence-based teaching approach**

*Houda Tebcherany\* & Ahmed Khocht*

Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** Evaluate the impact of an evidence-based teaching approach (EBTA) on predoctoral dental students' knowledge of evidence-based dentistry and to assess student perception of EBTA.

**Methods:** Pre and post EBTA implementation, students completed a validated survey (KACE) assessing students' knowledge, attitudes, access of evidence, and confidence related to evidence-based dentistry. Student satisfaction was assessed with a school administered end-of-course evaluation. IRB exempt, #5230151.

**Results:** Post EBTA implementation, improvements were noted in students' knowledge regarding appraisal of the literature ( $p=0.0001$ ), attitudes about evidence-based dentistry ( $p=0.0001$ ), students' frequency of accessing evidence ( $p=0.01$ ), and students' confidence in evaluating various aspects of published research ( $p=0.009$ ). Student feedback showed that 92% of students felt that this course was well planned and organized and 95% felt that they learned "a great deal".

**Conclusions:** Integrating an EBTA within a traditional dental curriculum course improves students' knowledge of evidence-based dentistry and satisfies their expectations of learning.

**Keywords:** predoctoral dental education, evidence-based instructional techniques, student engagement.

Poster 24014

**Reflections on the Implementation of ADEX Mock Exam at LLUSD**

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**Objectives:** To outline the insights gained by implementing of a new course, which includes the ADEX mock exam.

**Methods:** The course consisted of 7 lectures and ADEX mock exams that were scheduled on Friday afternoons. The course was a pass/fail class but passing the mock board was not required to pass the class.

**Results:** D4 students (N=129) completed the mock exams by the end of autumn quarter. The common errors for the mock exam were similar to the errors that occurred during the 2023 licensure exam highlighting the need to focus on those weak areas. Overall students appreciated the integration of the course into the curriculum, which provided them with the opportunity to practice and become familiar with ADEX exam procedures.

**Conclusions:** The ADEX prep course is expected to provide more confidence to students and also increase the first-attempt pass rate during the 2024 ADEX licensure exam.

**Keywords:** ADEX licensure examination, Mock Examination, Pass Rate

Poster 24015

**Esthetic Dental Rehabilitation in 73-Year Old Male**

*Kristina Padilla\**

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**Introduction:** When restoring anterior teeth, the most common treatment options are composite veneers, porcelain veneers, and porcelain crowns. The treatment decision is based on factors such as the remaining tooth structure, the patient's oral hygiene, and the patient's esthetic expectations.

**Description:** A 73-year old male presented for a periodic oral evaluation. The patient's chief concern was related to the staining and esthetics of his anterior restorations.

**Summary:** The most important aspect of esthetic treatment is managing and meeting the patients expectations. The decision to proceed with crowns was influenced by both the patient's desire for optimal esthetics, the presence of bruxism, and limited enamel for bonding.

**Conclusions:** Ultimately, this case underscores the significance of adopting a comprehensive approach to treatment planning. It is necessary that careful consideration is given to the patient's primary concern, the patient's expectations, the evaluation of available treatment options and their suitability for the specific circumstances, and the assessment of the patient's willingness to adhere to post-treatment care.

**Keywords:** lithium disilicate, esthetics, digital dentistry

Poster 24016

**A Case Report of a Tooth with Dens Evaginatus and Dens Invaginatus**

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**Case:** Dens invaginatus is a developmental dental anomaly in which there is an invagination of the enamel organ into the dental papilla before calcification is complete. Dens evaginatus is characterized by an outgrowth of enamel resembling a cusp. The occurrence of both invagination and evagination in one tooth with periapical pathology is rare. Research has shown that a multidisciplinary approach involving a pediatric dentist, oral surgeon, oral pathologist, endodontist, and orthodontist will provide the patient with the best possible prognosis.

In the present case, a 12-year-old male presented to the LLU OMFS department with an expansile unilocular radiolucent lesion located in left anterior mandible, with displacement of tooth roots on #23. Based on CBCT imaging, tooth #23 exhibited a rare occurrence of both dens invaginatus and evaginatus. The patient underwent extraction of tooth #23 and enucleation of the cyst. Histopathology revealed a periapical cyst with a stratified squamous epithelial cyst lining.

**Keywords:** Dens invaginatus, periapical cyst, dens evaginatus, talon cusp

Poster 24017 DDS CLIN

**Oral Health Care Providers' Awareness and Perception of Salivary Diagnostics**

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**Objectives:** To determine the perception of salivary diagnostics amongst dental providers and assess if this perception changes after personally experiencing salivary diagnostic testing.

**Methods:** Participants completed a pre-test survey that included three sections: demographics, health history, and salivary diagnostic testing perceptions. Participants supplied a saliva sample and samples were analyzed. Physical copies of test results were distributed to respective subjects with a standardized verbal explanation of the results. Participants completed a post-test survey to determine if perceptions changed.

**Results:** A majority of subjects were satisfied with the outcomes of the salivary diagnostic test and had a more positive attitude regarding the reliability of the test. There was also a significant increase in participants' willingness to implement salivary diagnostics in patient care after experiencing the test.

**Conclusions:** Perception of salivary diagnostics is generally more positive after personal experience with the test itself.

**Keywords:** Salivary diagnostics, saliva, perception, dental providers

#### Poster 24018 DDS CLIN

##### **The Effect of Face Mask Wearing on Breath Malodor**

*Thang Ngo\**, *Savanna Sanchez\**, *Joshua Ventenilla\**, *Jonathan Lee\**, *Tara Khamo*, *Udochukwu Oyoyo*, *So Ran Kwon*  
Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To determine if wearing face masks throughout the day affects perceived malodor and the measurements of the breath odor analyzer.

**Methods:** 41 dental students will be required to wear a mask for three block sessions. With nearly equal distribution between male and female (51.22% and 48.78%). A pre-survey and post-survey were conducted followed by breath measurements.

**Results:** There was a statistically significant difference in both perceived and measured breath after use of face masks (Wilcoxon signed-rank test,  $p < .05$ ). Median values also rose suggesting a discernible shift in breath measurements after mask application.

**Conclusions:** The use of face masks have an effect on an individual's self-perception of breath odor and breath odor measurements. However, further studies will need to be conducted with a larger sample size and control group to determine whether the effect is truly due to the use of face masks.

**Keywords:** bad breath, halitosis, face-mask, malodor

#### Poster 24019 DDS CLIN

##### **Impact of Dental Insurance Coverage on Periodontal Maintenance Compliance**

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Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** Identify the impact of insurance coverage on compliance with periodontal maintenance.

**Methods:** LLU-SD patient records (2018-2019) were scanned for information on patient payment modality (Denti-Cal, other insurance, cash), individuals who received scaling and root-planing (SRP), individuals who received periodontal re-evaluation following SRP, and individuals placed on periodontal maintenance (number of visits per year). Patient demographics and oral health measures were acquired.

**Results:** A total of 2864 patients were diagnosed with periodontitis and underwent SRP. Only 1358 (47.42%) received a re-evaluation visit. Of those, only 550 (40.50%) were placed on periodontal maintenance. Percentage of individuals placed on periodontal maintenance and frequency of visits were comparable between the 3 payment groups ( $p > 0.05$ ). Patients significantly differed between the 3 payment groups on age ( $p < 0.01$ ), gender ( $p < 0.01$ ), ethnicity ( $p < 0.01$ ), and employment ( $p < 0.01$ ). Oral health measures were comparable between the 3 groups ( $p > 0.05$ ).

**Conclusions:** Insurance coverage has no impact on compliance with periodontal maintenance.

**Keywords:** Insurance, dental; managed care programs; fee-for-service; periodontitis, periodontal maintenance

#### Poster 24020 DDS CLIN

##### **Patients treated at Loma Linda University School of Dentistry Special Care Department**

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Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To minimize knowledge gaps between dental providers and special care patients (SCPs) by evaluating dental treatments for patients at the LLUSD Special Care Department (SCD).

**Methods:** A retrospective case-controlled study was conducted. LLUSD SCPs demographics and dental procedures were randomly sampled from July 2022-June 2023 via LLUSD aXiUm and FileMaker and analyzed using Jamovi.

**Results:** Chi-squared testing revealed statistical significance between: Autism and preventative care ( $p = 0.002$ ); Intellectual Disability

and extractions, preventative care ( $p < 0.001$ ), and fillings ( $p = 0.003$ ); Developmental Delay and extractions:  $p = 0.021$ . There are associations between young patients with Autism (under 18) and preventative care ( $p = 0.0004$ ), and young adults with Intellectual Disability (18-40) and extractions ( $p = 0.0017$ ).

**Conclusions:** Compared to other LLUSD SCPs: patients with Autism, and patients with Intellectual Disability, respectively, received more preventative treatments; patients with developmental delays received more extractions. There is a correlation between medical conditions and dental treatments.

**Keywords:** Special Care Dentistry, Dental Accommodations, Autism Spectrum Disorder, Intellectual Disability, Preventative Care, Extractions, Fillings

#### Poster 24021 DDS CLIN

##### **Assessment of Dry Mouth Using the Modified Schirmer Test vs Unstimulated Salivary Flow Testing**

*Jingwei Cai\**, *Ire Ju\**, *Rylan Jones\**, *Samuel Madden\**, *Franklin Garcia-Godoy*, *Udochukwu Oyoyo*, *So Ran Kwon*  
Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To evaluate the efficacy and patients' perception of the modified Schirmer test (MST) to the traditional unstimulated saliva spitting test (TUSST) for monitoring salivary flow rate.

**Methods:** A total of one hundred patients were enrolled including healthy patients and patients with dry mouth. All subjects answered a brief self-reported survey about dry mouth before and after the two types of saliva tests and the preference on type of test administered.

**Results:** Participants ranged from 18 to 86 years old (mean=41.28 yr). MST ranged from 0 to 30mm (mean=16.24mm) and TUSST ranged from 0.4 to 3mL/min (mean=1.07mL/min). A significant positive correlation existed between the two saliva tests ( $r = 0.556$ ,  $p < 0.001$ ). Majority of patients (79%) preferred the MST while 6% preferred TUSST and 15% reported no preference.

**Conclusions:** MST results are comparable to TUSST in measuring patient's salivary flow with a higher level of patient satisfaction.

**Keywords:** Dry mouth, salivary flow, Modified Schirmer Test, Traditional Unstimulated Saliva Spitting Test

#### Poster 24022 DDS CLIN

##### **Patients' satisfaction and acceptance on the use of 2.5% vs 5% sodium fluoride topical varnish**

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Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To evaluate patients' preference of different types of varnishes.

**Methods:** The study was a single-blinded, split mouth design where all subjects were subjected to two types of topical varnishes (2.5 % (F) and 5% (M)), one on the right and the other on the left side that was determined randomly. After placement, subjects completed a 7-item questionnaire.

**Results:** Descriptive statistics revealed a general preference for varnish F in terms of better feel and overall preference, whereas varnish M was preferred for better taste and appearance. Chi-square tests indicated no significant differences in the frequency of preferences for feel, taste, appearance, and overall preference between varnishes M& F ( $p = 1.00$ ). Pearson correlation showed no significant correlation between participants' age and preference ( $p = 0.759$ ) or gender and preference ( $p = 0.059$ ).

**Conclusion:** Both varnishes were well accepted and neither one was superior to the other.

**Keywords:** Fluoride, sodium fluoride, topical varnish.

#### Poster 24023 DDS CLIN

##### **Effects of Repeated Instrumentation and Sterilization on the Cutting Efficiency of Nickel-Titanium Endodontic Rotary Files**

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Loma Linda University School of Dentistry, Loma Linda, CA

**Objective:** To assess cutting efficiency, after three instrumentation and two sterilization cycles, using the predoctoral LLUSD rotary technique

**Methods:** Ten Endodontic resin blocks J-shaped canals with a 16mm working length, were utilized in a study. Operators C and M performed three instrumentation cycles with Vertex Blue rotary files and two sterilization cycles. Time recording, accurate to the hour, minute, and second, utilized an iPhone timer.

**Results:** The Kruskal-Wallis test showed a general decrease in the time after each cycle and the test statistic,  $\chi^2(2) = 3.88$ , was not statistically significant,  $p = 0.144$ , suggesting that there were no significant differences in Time across the three cycles.

**Conclusions:** we can use the Vertex blue rotary instruments three times without the cutting efficiency being affected just as long as we follow the technique used in this project and the canal anatomy is a j-shaped configuration.

**Keywords:** cutting efficiency, sterilization, multiple instrumentation

Poster 24024 DDS COM

**Outcomes of Utilizing ChatGPT 3.5 in Writing Graduate Level Research Proposals**

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**Objectives:** To determine the efficacy of ChatGPT 3.5 to improve the quality of graduate level research proposal.

**Methods:** Fifteen students from Loma Linda Dental School and Hygiene programs created three proposal versions: A (student), B (ChatGPT 3.5), and C (combination) and recorded time spent. Student self-evaluation and 2 blinded graders recorded scores using a standardized rubric. Statistical analysis was performed using a 3-way ANOVA and Pearson correlation coefficients to interpret the data.

**Results:** No significant difference in scores from Reviewer 1&2 and self-evaluation across all proposal types. Differences in the amount of time it took to write proposal versions were statistically significant.

**Conclusions:** Time significantly differed and were ranked in order  $B > C > A$ . Reviewer scores for A, B, C were not statistically different. Possible reasons include inefficient ChatGPT use, small sample size, and leniency in self-evaluation grading. Further research is needed to gauge ChatGPT's efficacy as a proposal-writing aid accurately.

**Keywords:** ChatGPT, OpenAI, Artificial Intelligence, Proposal Writing

Poster 24025 DDS COM

**Self-confidence of DDS Graduates of LLUSD in Performing Root Canal Treatments**

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**Objectives:** Determine recent graduate's level of confidence in performing root canal treatments.

**Methods:** An anonymous survey was sent out to graduates from 201-2023. The survey contained 13 questions pertaining to confidence in performing RCT and how their education at LLUSD contributed. The survey was distributed via Qualtrics. Data analysis and inferential statistics were done using a Chi-Square test.

**Results:** The Chi-Square analysis showed a significant relationship between confidence levels and adequate practice in school, but not adequate knowledge. The Chi-Square analysis showed a significant relationship between RCT's post-grad, but not for RCT's completed in school.

**Conclusions:** The more experience with RCT's the higher the confidence levels, but there is not enough data to show that more RCT's in school increases confidence. We would like to see how more experience and a change in curriculum would affect confidence levels and satisfaction with education at LLUSD.

**Keywords:** Root Canal Treatment, Endodontic Education, Confidence Levels

Poster 24026 DDS COM

**Blue Zone Loma Linda: The Relationship between Lifestyle and Oral Health Profile**

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Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To explore the relationship between lifestyle patterns and oral health profiles in Loma Linda, a Blue Zone.

**Methods:** A survey-based cross-sectional study collected demographic, lifestyle, and OHIP information from 320 Loma Linda residents, sampled from locations including the university, churches, and residential areas.

The Pearson Correlation Coefficient assessed the relationship between Lifestyle Patterns and OHIP, while Multiple Linear Regression analyzed the correlation between Demographics, Lifestyle Patterns, and OHIP.

**Results:** A notable, favorable correlation existed between the variables,  $r(318) = .396$ ,  $p < .001$ , suggesting that higher lifestyle pattern totals corresponded with increased OHIP-14 scores. Age and Race significantly predicted lifestyle patterns ( $R^2 = .834$ ,  $F(8,290) = 182.4$ ,  $p < .001$ ), with Race also being a significant predictor for OHIP.

**Conclusion:** Individuals with favorable lifestyle patterns have better OHIP scores. Race and being an Asian significantly influences lifestyle patterns. Similarly, Race has a significant impact on oral health impact as measured by OHIP-14.

**Keywords:** Blue Zones, Loma Linda, OHIP-14

Poster 24027 DDS COM

**Survey on Dental Procedural Bleeding Management in Patients on Anticoagulants and Antiplatelets**

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**Objectives:** Our hypothesis posits a gap between the guidelines and dental clinicians' management of procedural bleeding for patients on anticoagulants and antiplatelets.

**Methods:** An anonymous survey was designed and sent to faculty, residents, and students. Demographics, knowledge about guidelines, questions about anticoagulants and antiplatelets, and questions on managing procedural bleeding in patients taking these agents were included.

**Results:** 29 faculty and 111 dental students completed the survey. Data shows 57.5% and 13.3% of participants believe that guidelines are moderately or slightly clear respectively, versus 27% believe the guidelines are well clear. When presented with clinical scenarios, including patients on DOACs, 81.3% followed current guidelines. However, 26.5% followed current guidelines regarding patients on dual antiplatelets.

**Conclusion:** This study shows a gap between the guidelines and clinicians' management of procedural bleeding. More practical recommendations are warranted.

**Keywords:** Procedural bleeding, anticoagulants, antiplatelets

Poster 24028 DDS COM

**Survival rate of posterior composite restorations at a Southern California Dental School**

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Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To assess survival rate of posterior composite restorations (1-5 year follow-up) and to identify factors related to failure of posterior composite restorations.

**Methods:** Axium data for posterior composite restorations done at LLUSD Main Clinic 01/01- 04/30/2018, abstracted including age, gender, tooth number, surfaces of restoration, procedure code, isolation method, primary reason for restoration, reason for failure. Regression analysis used to examine relationships between abstracted data and five-year survival of the restorations.

**Results:** Five-year survival rate was 86% for posterior composite restoration. No significant difference in five-year survival of posterior composite restorations between females and males (Kaplan-Meier test, P value=0.66) and among age (Kaplan-Meier test, P value=0.51). Four-surface posterior composite restoration (D2394) showed lowest survival rate (Kaplan-Meier test, P value<.00).

**Conclusions:** No significant difference in survival rate of posterior composite restorations over five years by gender and age. Failure rate of four-surface posterior composite restoration was highest.

**Keywords:** Composite Survival, Composite Failure, Survival Rate, Posterior Composite Restoration

Poster 24029 DDS COM

**Perceived Satisfaction and Ergonomic Benefits Among Dental Loupe Users**

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**Objectives:** This study assessed the satisfaction, ergonomic benefits, and discomfort associated with deflection and straight loupes among dental students.

**Methods:** A cross-sectional survey of Loma Linda University School of Dentistry dental students evaluated their experiences with loupes. Anonymous written surveys were distributed among 1<sup>st</sup> year, 2<sup>nd</sup> year, 3<sup>rd</sup> year, and 4<sup>th</sup> year dental students. 241 of these surveys were collected and statistically interpreted. The study focused on deflection versus straight loupes, using descriptive statistics and the Kruskal-Wallis test for analysis.

**Results:** Significant differences were found in ergonomic benefits of deflection loupe users over straight loupe users (p=0.008). No significant differences were noted in satisfaction (p=0.906), neck/back pain reduction (p=0.249) or eye strain reduction (p=0.992) across loupe types.

**Conclusions:** Ergonomic benefits vary between loupe types, highlighting a preference for deflection loupes for their ergonomic design. Personalized loupe selection is vital for maximizing ergonomic advantages in dental practices.

**Keywords:** Dental Ergonomics, Loupe Selection, Deflection Loupes, Straight Loupes, User Satisfaction, Musculoskeletal Disorders, Dental Practice, Ergonomic Benefits

Poster 24030 DDS SCIEN

**Seating Length at Which Dental Acorn Acrylic Burs Experience Failure**

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Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To evaluate the seating length at which acorn acrylic burs for the dental straight hand piece fail.

**Methods:** 12 dental acorn acrylic burs were purchased. Each bur was seated completely in the hand piece. 500g of force was applied to the spinning bur for 2 seconds while cutting acrylic. The bur was then examined for damage. All the other burs went through the same test. The test was repeated with the bur being seating 5mm less than last test. The test was repeated until the chuck of the handpiece no longer gripped onto the bur. One bur was also tested with 1 kg of force with the same methodology.

**Results:** There was no bur failure for all of the tested burs.

**Conclusions:** Even if clinicians do not follow manufacturers recommendations, these burs are resilient from being damaged as observed in this experiment.

**Keywords:** Dental acrylic bur, dental handpiece, bur failure.

#### Poster 24031 DDS SCIEN

##### **Accuracy of Shade Detection With Trios Intraoral Scanner**

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**Objectives:** To compare the accuracies of shade detection with 3Shape TRIOS scanner on Vita Classical and 3D Master Guides.

**Methods:** 3Shape Trios Scanners were used to measure shade on Vita Classical (16 tabs) and Vita 3D Master Guides (26 tabs). Three measurements were taken on each individual tab for incisal, middle and cervical portions. 4 examiners took these same measurements, giving a total sample size of 192 measurements for Vita Classical and 312 measurements for 3D Master. The study was conducted under a double blind and standardized setting.

**Results:** The results showed no statistically significant difference in the accuracy between scanning Vita Classical (37%) and 3D Master (46.3%) shade guide.

**Conclusion:** Accuracy of shade detection is comparable when scanning Vita Classical and Vita 3D Master Shade guides. However, both of them did not show clinically significant results. Additionally, scanning accuracy decreased as value increased (Less accurate in lighter tooth colors).

**Keywords:** Shade detection, Digital Scan, Optic Scanner

#### Poster 24032 DDS SCIEN

##### **Effects of Tightening Protocol on Position Changes of Screw-Retained Single Implant Crowns**

*Hui Ju Wu\*, Hui Ling Wu\*, Sasiya Bhumpattarachai, Hung-Chi Liao, Udochukwu Oyoyo*

Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To evaluate position changes of screw-retained implant crowns after tightening and retightening protocol.

**Methods:** A total of 11 screw-retained implant crowns were tightened and scanned using intraoral scanner at 4 different timeframes: 1) After hand-tightening, Control; 2) After tightening protocol; 3) At 10 minutes after tightening protocol; 4) After retightening protocol. All scans were exported to create the STL files, superimposed and analyzed using matching software to determine the position changes at 2 regions (occlusal and gingival). Statistical analysis was performed at  $\alpha=.05$ .

**Results:** At occlusal zone, no significant differences in position changes were found among all groups ( $P>.05$ ). At gingival zone, significant differences in position changes were found after tightening protocol ( $P=.025$ ), and after retightening protocol ( $P=.014$ ). Moreover, after retightening, position changes were found at gingival region as compared to at 10 minutes ( $P=.034$ ).

**Conclusions:** Within the confines of this study, the protocol for tightening and retightening might not impact the occlusal position of the implant crown, but it could influence soft tissue changes in the cervical region.

**Keywords:** Tightening, Retightening, Screw-retained, Implant crown, Position Change

#### Poster 24033 DDS SCIEN

##### **Accuracy of Partial and Complete-Arch Analog and Digital Impressions: An In-Vitro 3D Analysis**

*Jeremy Chieng\*, Daniel Lee\*, Nicole Lim\*, Sydney Yu\*, Joseph Kan, Sunee Limmeechokchai, Udochukwu Oyoyo, John Won*

Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** To compare the accuracy between full-arch scan (FAS), partial arch scan (PAS), full-arch cast (FAC) and partial-arch cast (PAC) as well as analog and digital impression techniques.

**Methods:** Typodonts will have a #19 zirconia crown preparation along with grooves that will aid in alignment. Analog impressions were taken with 3M™ Imprint™ 4 VPS Impression Material and then poured into a cast using Die-Keen® Green Die Stone. Scans were obtained with a 3Shape TRIOS intraoral scanner. Superimposition and analysis of the scan files were completed with Geomagic Control 2015.

**Results:** All three groups (PAS, FAC, and PAC) were statistically different from the control group (FAS) (Wilcoxon signed-rank test,  $p<0.001$  and Repeated ANOVA test,  $p<0.05$ ) with a deviation in the y-axis (occluso-gingival) contributing the majority of the

deviation.

**Conclusion:** Both conventional and digital methods as well as partial and full-arch scans show a statistically significant deviation.

**Keywords:** Partial arch, full arch, scan, conventional, digital

Poster 24034 DDS SCIEN

**Efficacy of Various Noise Cancelling Devices: In-Vitro Study**

*Kanush Chand\**, *Sejal Sidhu\**, *Maria Carvalho\**, *Ryan Sinclair*, *Udochukwu Oyoyo*, *So Ran Kwon*

Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** Assess Noise Control Devices in dentistry for better workplace satisfaction. Provide tips for a quieter, productive environment.

**Methods:** The study used devices like a Pelican Case with a 3D printed ear and an AMETEK Mark 3 Noise Dosimeter. It tested noise-canceling devices like AirPods Pro, 3M™ 1100 Foam, loop quiet and engage earplugs in an isolated dental lab. Sound levels were measured using the Dosimeter inside the pelican case. Recordings were taken every minute for 15 times to assess the effectiveness of noise-canceling devices in reducing dental equipment noise.

**Results:** Kruskal-Wallis test: significant differences in all variables ( $p < 0.001$ ). Pairwise comparisons reveal significant differences between certain groups, but none between "AIRPODS" and "LOOP QUIET" or "3M FOAM" and "LOOP QUIET."

**Conclusions:** The substantial differences in sound levels stress the importance of personalized noise pollution management, which could positively impact the environment and human health.

**Keywords:** noise-cancelling device, hearing health, dental environment

Poster 24035 DDS SCIEN

**Effect of Spaceflight on Mouse Incisor Tooth Morphology by MicroCT Analysis**

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Loma Linda University School of Dentistry, Loma Linda, CA

**Objectives:** The study aims to investigate the effects of space flight on the enamel and dentin of mouse incisors.

**Methods:** Sixty mice at thirty-five days old, were divided equally into six groups: 1) Vivarium Control - VC (n=10); 2) Ground Group - GG (n=10); 3) Flight group - FG (n=1); 4) Flight Control – FCG (n=10); 5) Control group – CC (n=10) and 6) Baseline group - BG (n=10). Upon return to Earth, the mice were euthanized, and mandibles were collected within 38+/-4 hours (n=20/group). All specimens were scanned with SkyScan 1272. The scanning settings will be 55 kVp, 181 mA, and 0.5-mm Al filter at the resolution of 5 µm. The region of interest is the whole maxillary incisor. CTAn software version 1.13. will be used to analyze enamel volume and mineral changes.

**Results:** Pending statistical analysis

**Conclusions:** Pending results

**Keywords:** Space flight, mouse incisors, microCT

# POSTER COMPETITION JUDGE FORM: ORIGINAL RESEARCH



## 2024 HOMECOMING CONVENTION

Poster Judging Form March 1, 2024

Poster Original Research: XXXXX

### CLINICAL/SCIENTIFIC VALUE OF SUBJECT MATTER

Maximum number points for this section = 42

	<u>Low</u>			<u>High</u>
1. Important, timely, pertinent	1	3	5	7
2. Applicable to clinical practice	1	3	5	7
3. Organized, logical, well-sequenced	1	3	5	7
4. Scientifically sound and supported	1	3	5	7
5. Original, creative or new approach	1	3	5	7
6. Used appropriate methods and/or materials	1	3	5	7

Total number points for this section: \_\_\_\_\_

### VERBAL PRESENTATION

Maximum number points for this section = 42

	<u>Low</u>			<u>High</u>
1. Problem and/or purpose clearly stated	1	3	5	7
2. Objectives and conclusion related	1	3	5	7
3. Title is representative of project	1	3	5	7
4. Statistics and results explained	1	3	5	7
5. Presentation is dignified and professional	1	3	5	7
6. Presenters are able to answer questions	1	3	5	7

Total number points for this section: \_\_\_\_\_

### VISUAL PRESENTATION

Maximum number points for this section = 16

	<u>Low</u>		<u>High</u>
1. Creative, attractive and professionally displayed	0	2	4
2. Visual aids represent overview of project	0	2	4
3. Abstract content is organized and complete	0	2	4
4. Handout available	0	2	4

Total number points for this section: \_\_\_\_\_

Questions and Comments \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Judge \_\_\_\_\_  
(Signature)

Total Points: \_\_\_\_\_

# POSTER COMPETITION JUDGE FORM: CASE REPORT



LOMA LINDA UNIVERSITY  
School of Dentistry

## 2024 HOMECOMING CONVENTION

Poster Judging Form March 1, 2024

Poster Case Report: XXXXX

### CLINICAL/SCIENTIFIC VALUE OF SUBJECT MATTER

Maximum number points for this section = 42

	<u>Low</u>			<u>High</u>
1. Important, timely, pertinent	1	3	5	7
2. Applicable to clinical practice	1	3	5	7
3. Organized, logical, well-sequenced	1	3	5	7
4. Scientifically sound and supported	1	3	5	7
5. Original, creative or new approach	1	3	5	7
6. Used appropriate literature to support case	1	3	5	7

Total number points for this section: \_\_\_\_\_

### VERBAL PRESENTATION

Maximum number points for this section = 42

	<u>Low</u>			<u>High</u>
1. Problem and/or purpose clearly stated	1	3	5	7
2. Objectives and conclusion related	1	3	5	7
3. Title is representative of project	1	3	5	7
4. Search for references is explained	1	3	5	7
5. Presentation is dignified and professional	1	3	5	7
6. Presenters are able to answer questions	1	3	5	7

Total number points for this section: \_\_\_\_\_

### VISUAL PRESENTATION

Maximum number points for this section = 16

	<u>Low</u>			<u>High</u>
1. Creative, attractive and professionally displayed	0	2		4
2. Visual aids represent overview of project	0	2		4
3. Abstract content is organized and complete	0	2		4
4. Handout available	0	2		4

Total number points for this section: \_\_\_\_\_

Questions and Comments \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Judge \_\_\_\_\_  
(Signature)

Total Points: \_\_\_\_\_



LOMA LINDA UNIVERSITY

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