

## ABSTRACT FORMAT INSTRUCTIONS

Read and follow these instructions carefully. Abstracts that do not adhere to these requirements will be returned to the primary presenter for correction. If the corrections are not resubmitted by the due date, the abstract may not appear in the monograph.

Students or staff members working on team projects should submit only one form for the entire group. Student and staff researchers must seek guidance from their mentors in preparing the abstract. Faculty mentors must review staff and student abstracts before they are submitted for publication in the Research Day proceedings. Use the guidelines below to prepare your abstract.

### Guidelines

1. Limit title to a maximum of 10 words. In the title, capitalize the first letter of all principal words as well as the first letter of words of four or more letters. **The title should be in bold font.**
2. Capitalize all letters in the names of presenters—use initials for first names (omit degrees, and academic titles). Place an asterisk after the name of the primary presenter.
3. Place name(s) of institution(s) within parentheses.
4. Do not use all capital letters in the body of the abstract.
5. Abstracts are limited to 300 words (this word limit does **not** include the title and author/institution information.)
6. The abstract must contain a brief statement of:
  - a. the objectives of the investigation
  - b. experimental methods used,
  - c. essential results, including data and, where appropriate, statistics.
7. Illustrations are not permitted in the abstract.
8. Results and conclusion must be stated in the abstract. It is not acceptable to report that results "will be presented at the meeting." If you apply for a student or staff award and you have indicated on your abstract registration form that your research study has not been completed at the time of abstract submission, you will be expected to inform the judges on Research Day of any new data obtained since submission of the abstract and any new conclusions drawn based on these new results.
9. Abstracts reporting studies with unidentified drugs or materials will not be accepted. All drugs and materials must be identified both in the abstract and during the presentation.
10. Underline the conclusion.
11. Include name of supporting agency and grant number, if applicable.
12. **Proofread carefully!** This is the version that will appear in the proceedings, so make sure there are no errors.

### Abstract Samples

You may use subheadings to identify each part of the abstract (For example Objective: Methods: Results: ) but it is not required. See the two sample abstracts below:

#### SAMPLE 1

**Characterization of *Streptococcus mutans* Fimbriae and Antibody Response.** R. GREGORY\*, N. WARNER, L. GFELL, M. FONTANA (Indiana University School of Dentistry) The ability of bacteria to adhere to pellicle-coated enamel tooth surfaces is a critical step in oral bacterial colonization. Oral

bacteria adhere to receptors of host origin in salivary pellicle. *S. mutans* has been identified as the major etiological agent of human dental caries and comprises a significant proportion of the oral streptococci in carious lesions. Bacterial fimbriae are small (100-300 nm) hairlike appendages emanating from the cell surface. The objective of this study was to characterize fimbriae from *S. mutans* biochemically and immunologically. *S. mutans* fimbriae were isolated by a shearing technique and contained 85% protein, 15% polysaccharide and glucosyltransferase enzyme activity. The preparation had 3-4 bands (MW 40-60 kDa) on reducing SDS-PAGE and 2 peaks on molecular sieve HPLC. Mouse antisera specifically stained the fuzzy coat of *S. mutans* showing short fimbriae-like fibrils protruding 100-200 nm from the surface of the cells. Controls without mouse antibody did not exhibit this staining. There were significantly higher ( $p < 0.05$ ) levels of salivary IgA, but not serum IgG, antibodies to fimbriae by ELISA in caries-free salivas than caries-active samples. Immunoblots demonstrated similar results. The results suggest that *S. mutans* fimbriae may be an important adherence factor and that caries-free subjects mount a protective response to the fimbriae. Supported by USPHS Grant No. DE 07318.

## SAMPLE 2

**Mechanical Properties of a New Zinc-Reinforced Glass Ionomer Restorative Material.** S.S. AL-ANGARI\*, A.T. HARA, T.G. CHU, J.A. PLATT, N.B. COOK (Indiana University School of Dentistry) Objective: Zinc-reinforced glass ionomer restorative material (ZRGIC) has been proposed as an improved restorative material. The study compared the mechanical properties of a ZRGIC restorative material (ChemFil Rock, (Dentsply)), with three commercially available glass ionomers (GICs); Fuji IX GP Extra (GC America), Ketac Molar (3M ESPE) and EQUIA Fil (GC America). A resin composite, Premise (Kerr), was included as a control group except for fracture toughness. Methods: Fracture toughness (KIC) testing was done according to ISO 13586, using single edge notched-beam specimens (n=10), loaded until failure in a three-point bending test device. Specimens (n=9) for the hardness, roughness and abrasive wear testing were made by mixing and inserting the restorative materials into individual stainless steel molds followed by flattening and polishing. Knoop microhardness (KHN) was performed (25 g, 30 s), on pre-determined areas of the polished surfaces. For toothbrushing wear resistance and roughness, specimens were brushed in an automated brushing machine (200 g) with a suspension of dentifrice and water (1:1, w/v) for 20,000 strokes. Specimen surfaces were scanned in an optical profilometer before and after brushing to obtain surface roughness (Ra) and mean height (surface) loss using image subtraction and dedicated software. Data were analyzed using Wilcoxon Rank Sum tests ( $\alpha=0.05$ ). Results: The means  $\pm$  standard deviation for all tests are given below in the table.

Material	Knoop Hardness (KHN, kg/mm <sup>2</sup> )	Surface Loss ( $\mu$ m)	Roughness Change (Ra, $\mu$ m)	Fracture Toughness (K <sub>IC</sub> , MPa-m <sup>1/2</sup> )
ChemFil Rock	52.39 $\pm$ 2.67 <sup>c</sup>	4.69 $\pm$ 1.23 <sup>a</sup>	0.79 $\pm$ 0.14 <sup>a</sup>	0.99 $\pm$ 0.07 <sup>b</sup>
Fuji IX	66.86 $\pm$ 5.36 <sup>a</sup>	5.21 $\pm$ 1.48 <sup>a</sup>	0.10 $\pm$ 0.98 <sup>b</sup>	0.80 $\pm$ 0.04 <sup>c</sup>
Ketac Molar	62.53 $\pm$ 2.91 <sup>a</sup>	3.79 $\pm$ 2.82 <sup>ab</sup>	0.62 $\pm$ 0.60 <sup>b</sup>	0.85 $\pm$ 0.09 <sup>c</sup>
EQUIA Fil	58.64 $\pm$ 2.01 <sup>b</sup>	5.72 $\pm$ 1.04 <sup>a</sup>	0.14 $\pm$ 0.46 <sup>b</sup>	1.21 $\pm$ 0.23 <sup>a</sup>
Premise	45.44 $\pm$ 2.87 <sup>d</sup>	3.07 $\pm$ 0.93 <sup>b</sup>	0.68 $\pm$ 0.97 <sup>ab</sup>	—

Superscript letters indicate statistically similar groups per column.

Conclusion: The new ZRGIC restorative material showed intermediate fracture toughness, high change in surface roughness, and low microhardness compared to three other commercial GICs. All materials were supplied by respective manufacturers.