interdisziplinäres Zentrum für Klinische Forschung

Clinician Scientist Programme - Biosketch Module Step 2

Title/ First Name/ Last Name

Dr. med. dent. Eva Maier

Clinic

Dental Clinic 1

CV (Current position, academic career, achievements and extracurricular activities, languages)

> 2008-13: study of dentistry
> 2014-now: research assistant, dentist, clinical supervision of students, lecturer in pediatric dentistry at Dental Clinic 1 Erlangen
> 09/2015: doctorate degree (Dr.med.dent, magna cum laude)
> 2018-2020: Participant AriadneMed Mentoring Program
> 2020-now: Speaker Clinician Scientist Program Fellows in the CSP-committee
> 2021-now: PhD track as "buitenpromovendus" at Radboudumc, Nijmegen (NL)
> 2022-now: IZKF junior project (J103 - Predicting clinical longevity of dental materials)

Research Area

Medical Engineering

Dental Material Research

CSP Project Outline

With the rapid translation of emerging material processing technologies for tooth restoration, there is an urgent need for reliable laboratory testing systems that accurately predict the clinical longevity of new materials. The current project aims to 1) develop a novel in-vitro wear testing model that demonstrates accurate preclinical predictability of longitudinal clinical trial data and 2) explore the suitability of modern 3D-printing processes for dental material application.

Methods, Skills and Know-How

- Mechanical characterization of dental resin-based composite materials (polymerization properties, degree of conversion, volume shrinkage, shrinkage stress)
- Evaluation of longevity and performance of dental restorations in clinical trials
- Quantitative (profilometry) and qualitative (digital and scanning electron microscopy) analysis of worn or fractured material surfaces

Current Funding

IZKF Junior Project (J-103: Predicting clinical longevity of dental materials)

Intended Funding Applications

DFG Clinical Trial

Most important publications (3)

Taschner M, Stirnweiss A, Frankenberger R, Kramer N, Galler KM, Maier E. Fourteen years clinical evaluation of leucite-reinforced ceramic inlays luted using two different adhesion strategies. Journal of Dentistry. 2022 Aug; 123:104210.

Maier E, Grottschreiber C, Knepper I, Opdam N, Petschelt A, Loomans B, Lohbauer U. Evaluation of wear behavior of dental restorative materials against zirconia in vitro. Dental Materials. 2022 May;38(5):778-788.

Maier E, Loumprinis N, Belli R, Petschelt A, Eliades G, Lohbauer U. (2021) Fracture toughness of dental incremental composite-composite interfaces at elevated tempera-tures. Journal of the Mechanical Behavior of Biomedical Materials. 2021 Oct; 122:104655.