

## School of Pharmacy

# Division of Pharmacology

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### Academic Background:

- Ph.D., Pharmaceutical Sciences, University of Missouri-Kansas City, Kansas City, MO, 1995
- Post-bachelor Fellow, Department of Pathology, Kirksville College of Osteopathic Medicine, Kirksville, MO, 1986
- B.S., Pharmacy and Biochemistry, Universidad National Mayor de San Marcos, Lima, Peru, 1985

### Research Interests:

My research interest is to develop mechanism-based methods for the toxicological evaluation of nanostructured materials, biomaterials and drugs. Test development and application involves cell culture technology for evaluation of cytotoxicity, apoptosis, genotoxicity (mutagenicity, DNA damage and repair), inflammation, endocrine disrupting activity and *in vitro* metabolism. Some *in vitro* activity using liposome technology is aimed at developing methods that detect cytotoxicity at the level of cell membrane damage. Toxicity of biomaterials is also assessed for the release of toxic leachables, their metabolism and detoxification. Monomers and resin/composite leachables and their metabolites are analyzed by HPLC, NMR, and TLC. Most methodologies support development of mathematical equations based on quantitative structure activity relationships (QSAR) for determination of mutagenicity, skin sensitization and cytotoxicity.

### Research Grants:

My research interests are supported by NIH grants as ongoing research collaborations with UMKC Schools of Dentistry and Chemistry, Midwest Research Institute, and 3M-ESPE dental Product Division.

### Representative Publications:

**Kostoryz EL, Q. Zhu, H Zhao, M Miller, JD Eick.** "Assessment of the Relative Skin Sensitization Potency of Siloranes and bis-GMA using the Local Lymph Node Assay and QSAR Predicted Potency" *J Biomed Mater Res* 2006, (in press).

**Kostoryz EL**, Zhu Q, Zhao H, Glaros AG, Eick JD, "Assessment of DNA damage for silicon-oxirane compounds in cultured mammalian cells," *Mutat Res* 2006 (in press).

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Eick JD, Robert E Smith, and Charles S. Pinzino, **Kostoryz EL**, "Stability of silorane dental monomers in aqueous systems," *Journal of Dentistry* 34(6): 405-410, 2006.

JD Eick, RE Smith, CS Pinzino, SP Kotha, **EL Kostoryz**, and Cecil C. Chappelow, "Photopolymerization of Developmental Monomers for Dental Cationically Initiated Matrix Resins," *Dental Materials*, 2005, 21 (4), pp.384-390.

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Bharat W, **Kostoryz EL**, Lee C, "Biocompatibility of components of a female controlled drug delivery system," *J Biomed mater Res* 71A: 209-216, 2004.

**Kostoryz EL**, Zhao H, Eick JD, "Differences in DNA repair influenced by structural differences among oxirane compounds," *ASM Conference*, November 14-20, 2004.

**E.L. Kostoryz**, L.A. Wetmore, W.G. Brockmann, D.M. Yourtee, J.D. Eick, "Genotoxicity assessment of oxirane-based dental monomers in mammalian cells," *J Biomed Mater Res*, 68A: 660-667, 2004.

Luchtefeld, R, **Kostoryz EL**, Smith RE, "Determination of Ginsenosides Rb1, Rc and Re in Different Dosage Forms of Ginseng by Negative Ion Electrospray LC-MS," *J Agricultural & Food Chem*, 52:4953-49-56, 2004.

**EL Kostoryz**, RE Smith, AG Glaros, CC Chappelow, JD Eick, "In vitro mutagenicity and metabolism of the cycloaliphatic epoxy Cyacure™ UVR 6105," *Mutat Res*, 563: 35-47, 2004.

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