

KYLE M. KOVACH

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EDUCATION **UNIVERSITY OF PITTSBURGH**, Pittsburgh, PA
Joseph M. Katz Graduate School of Business
Master of Business Administration, April 2011
Swanson School of Engineering
Master of Science in Bioengineering, April 2011
Concentration: Cellular and Organ Engineering
Cumulative GPA: 3.791
Summa cum Laude Graduate; Member, Beta Gamma Sigma Business Honors Society

UNIVERSITY OF PITTSBURGH, Pittsburgh, PA
Bachelor of Science in Bioengineering, April 2009
Concentration: Cellular and Medical Product Engineering
Minor: Chemistry
Cumulative GPA: 3.708
Magna cum Laude Graduate; Member, Tau Beta Pi Engineering Honors Society; Member, Biomedical Engineering Society

EXPERIENCE **LOUIS STOKES CLEVELAND VA MEDICAL CENTER** Cleveland, OH
Biomedical Engineer May 2011 – Present

- Lead engineer of a research team developing a novel microfluidic blood oxygenation device (artificial lung)
- Experience with silicone formulation and curing as well as soft lithography casting/molding processes and bonding to silicon and glass substrates
- Assembled microfluidic devices using microfabrication techniques including photolithography, laser cutting/engraving, polymer spin coating, and oxygen plasma treatment
- Developed a method to apply a hemocompatible coating to the polymer surface, validating the application of the coating using contact angle analysis, XPS/ESCA, and ATR-FTIR
- Characterized surface biocompatibility through protein adsorption and cell/blood interaction assays
- Performed *in vivo* animal testing of the artificial lung in a rat model
- Researcher in an industry-sponsored project investigating the toxic effects of platinum neural stimulating electrodes on cell populations
- Findings published in peer-reviewed scientific journals and presented at local and national conferences

UPMC DEPARTMENT OF OTOLARYNGOLOGY Pittsburgh, PA
Administrative Resident May 2010 – August 2010

- Led team on three month project concerned with improving departmental Press-Ganey scores in Waiting Area and Exam Room Comfort
- Analyzed trends of physician charges, revenue units, and patients seen per day from 2007-09 to gauge the impact of an electronic medical records system with regards to physician productivity
- Investigated the financial and strategic feasibility of creating a new voice clinic specialty
- Presented bi-weekly updates and final project results to both departmental administration and UPMC Corporate Management

S.R. LITTLE LABORATORIES Pittsburgh, PA
Student Researcher May 2008 – August 2009

- Worked in conjunction with graduate student researching hollow fiber based growth factor delivery and angiogenesis as part of a wound healing/temporal drug delivery study

- Performed protein release/diffusion experiments and angiogenesis assays with various cell lines
- Analyzed experimental results using both fluorescent inverted and confocal microscopy
- Gave bi-monthly presentations to laboratory group and Principal Investigator detailing experimental progress, problems, and research plan

PROFESSIONAL ACCOMPLISHMENTS

Publications

- K.A. Potter-Baker, J.K. Nguyen, **K.M. Kovach**, M.M. Gitomer, T.W. Srail, W.G. Stewart, J.L. Skousen, J.R. Capadona. Development of superoxide dismutase mimetic surfaces to reduce accumulation of reactive oxygen species for neural interfacing applications. *Journal of Materials Chemistry B* [advance article] (2014).
- **K.M. Kovach**, J.R. Capadona, A. Sen Gupta, J.A. Potkay. The effects of PEG-based surface modification of PDMS microchannels on long-term hemocompatibility. *Journal of Biomedical Materials Research Part A* [epub ahead of print] (2014).
- J.E. Tengood, **K.M. Kovach**, P.E. Vescovi, A.J. Russell, S.R. Little. Sequential delivery of vascular endothelial growth factor and sphingosine 1-phosphate for angiogenesis. *Biomaterials* 31,30 (2010).

Presentations

- **Kyle M. Kovach**, Jeffrey R. Capadona, Anirban Sen Gupta, Joseph A. Potkay. Enhancing the Hemocompatibility of a Poly(dimethylsiloxane) Microfluidic Artificial Lung. Podium Presentation. *Biomaterials Day*. Cleveland, OH. 10/26/13.
- **Kyle M. Kovach**, Jeffrey R. Capadona, Anirban Sen Gupta, Joseph A. Potkay. The Effects of PEG-Based Surface Modification of PDMS Microchannels on Long-Term Hemocompatibility. Poster Presentation. *BMES Annual Meeting*. Seattle, WA. 9/26/13.
- **Kyle M. Kovach**, Jeffrey R. Capadona, Anirban Sen Gupta, Joseph A. Potkay. Improving the Lifetime and Blood Compatibility of Lab-on-a-Chip Devices and Artificial Organs. Poster Presentation. *Research ShowCASE*. Cleveland, OH. 4/12/13.
- **Kyle M. Kovach** and Joseph A. Potkay. Development of a Hemocompatible Microfluidic Artificial Lung. Poster Presentation. *VA Research Week*. Cleveland, OH. 4/24/12.

ADDITIONAL SKILLS Proficient in Microsoft Office. Working knowledge in ImageJ, MATLAB, DraftSight, SolidWorks, and LabVIEW. Experience with animal handling, cell culture, histology and microscopy, microfabrication, and polymer surface analysis.