

Term Poster and Presentation Assignment (v. 1.0)

PE-645, Spring '10, Dr. C. S. Tritt

Create a present a poster and PowerPoint slideshow a perfusion related biomaterials topic. The target audiences for your power and slideshow are your fellow perfusion students and working perfusionists. You should use and cite 3 or more **reasonably current journal articles** as sources (references). I suggest you search 2 or more of the following literature databases for sources: *Medline PubMed, EI Compendex, Biomedical Reference Collection Database and Applied Science and Technology*. You may also want to search the *Dissertations, Proceedings and PapersFirst* databases, which will have the very latest information although I've never used them and can't vouch for their utility. I suggest you initially limit your search to review papers in English. Currently, all of these databases can be accessed from any computer having a MSOE IP address (on campus or connected to MSOE via VPN) by going to <http://www.msoe.edu/library>.

Key dates:	3/31	Project assigned. Start selecting topics (week 4)
	4/14	Topics selected (week 5)
	4/21	Preliminary list of references due (week 6)
	5/5	Optional drafts accepted (week 8)
	5/12	Slide Presentations (week 9)
	5/19	Posters due (week 10)

Topics are available on a first-come, first served basis. You may e-mail your topic selections to me at tritt@msoe.edu.

Suggested Poster/Presentation Topics:

Properties, hemocompatibility and perfusion applications of polyurethanes.
Properties, hemocompatibility and perfusion applications of polyvinyl alcohols.
Properties, hemocompatibility and perfusion applications of polyesters.
Properties, hemocompatibility and perfusion applications of polymethylmethacrylate (PMMA).
Properties, hemocompatibility and perfusion applications of silicone polymers.
Properties, hemocompatibility and perfusion applications of other specific polymers.
Properties, hemocompatibility and perfusion applications of ceramics.
Properties, hemocompatibility and perfusion applications of specific metallic alloys.
Properties, hemocompatibility and perfusion applications of fluorocarbon emulsions.
Biomaterials and biomaterial considerations for extracorporeal blood pumps.
Biomaterials and biomaterial considerations for VAD's.
Biomaterials and biomaterial considerations for TAH's.
Biomaterials and biomaterial considerations for oxygenators.
Biomaterials and biomaterial considerations for dialyzers.

Biomaterials and biomaterial considerations for cardiac pacer leads.
Biomaterials and biomaterial considerations for heart valves.
Biomaterials and biomaterial considerations for vascular implants.
The effect of a specific sterilization method on a variety of perfusion related biomaterials.
The effect of a variety of sterilization methods on a specific perfusion related biomaterial.
The adsorption of plasma proteins and its affects.
Aspects of endothelial cell culture for hemocompatibility.
Any topic combining tissue engineering and perfusion.
Blood substitutes (hemoglobin solutions or fluorocarbon emulsions) – warning, I’m getting a bit tired of this one.
Surface modification and/or coatings for hemocompatibility.
Hemocompatibility testing.
Any biomaterials topic specifically related to your planned thesis project.

Slide presentations should be 15 to 20 minutes long (including questions). Presentations will be done in class during week 9.

Posters should be 36” wide by 30” tall and include appropriate illustrations and the MSOE logo (available for download from *O:\common\MSOE Logos* on MSOE’s network). There are some poster resources and tips at <http://www.ncsu.edu/project/posters/NewSite>. This N.C. State website has some very good poster design instructions. Follow the “Create Your Poster” > “Software” link for specific PowerPoint setup instructions. There may be a “public” poster session at the start of class in week 10. You will be expected to explain and answer questions about your poster to MSOE faculty members and BE students.