

CURRICULUM VITAE

James P. DiOrio

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Summary:

Expertise: Imaging as applied to Biologics and medical device development. Ultrastructural analysis of proteins, vaccines, biofilms, biopolymers. Biocompatibility /Hemostasis assessment including in vitro test system development. Imaging Equipment assessment, GLP Compliance (21 CFR Part 11) and validation.

Experience: Headed imaging group at Baxter Healthcare. Founder /Owner of environmental testing lab (NVLAP accreditation). Managed a clinical electron microscopy laboratory (Aurora Healthcare).

Professional: Past chair/leader of Microscopy Society of America Focus Interest Groups (2015) and the Pharmaceutical Sciences Focus Interest Group (Current member). Past member (2015 program end) of advisory board for Madison College (MATC) Electron Microscopy Technologist Program. Past President and Biological Director of Midwest Microscopy and Microanalysis Society (Current member).

Education:

M.S. (BIOLOGY) 1977 Marquette University - Milwaukee, Wisconsin

B.S. (BIOLOGY) 1974 Marquette University - Milwaukee, Wisconsin

Professional Positions:

Consultant; BioPhia Consulting Inc., Lake Forest, IL. 2015 to Present.
Biotechnology, pharmaceutical and medical device consulting company providing expertise from discovery to commercialization of novel therapies (See Expertise above).

Senior Research Scientist; Particles and Interfaces, Baxter Healthcare Corporation, Round Lake Illinois. 1997-2015.

Responsible for management of the Microscopy Group (LM, TEM, SEM, EDS, AFM, CT) which supported divisional product development as well as products in the field. My research interests were in the area of hemostasis particularly on the ultrastructure of clotting proteins, biopolymers, fibrin sealants and various hemostats.

Manager; Medical Materials Technology Center, Baxter Healthcare Corporation, Round Lake Illinois. 1992- 199. Imaging Center Manager.

Senior Research Associate; Sinai Samaritan Medical Center (Aurora Healthcare), Milwaukee, Wisconsin. 1981-1992. Electron Microscopy Facility Supervisor.

President; Fine Beam Analytical, Milwaukee Wisconsin. 4/88-2/91. Environmental testing lab. NVLAP accreditation for the analysis of asbestos by TEM.

Electron Microscopist/Lab Supervisor; Department of Biology, Marquette University, Milwaukee, Wisconsin. 1/80-9/81.

Lab Supervisor; Department of Physiology, University of North Carolina, North Carolina. 3/78-1/80.

Publications:

Mantei JR, Murphy MA, Stojanovic L, Wahlen L, Pasmore M, DiOrio JP. Microscopic Techniques for Sterility Assurance Support in the Medical Products Industry. *Microanal* 21 (Suppl 3) (2015): 63-64

Dwyer, J F, McCoy JA, Yang Z, Husser M, Redl H, Murphy MA, Wolfsegger M, DiOrio JP, Goppelt A, Donovan S. Thrombin based gelatin matrix and fibrin sealant mediated clot formation in the presence of clopidogrel. *Thrombosis J* (2014): 12:10

Murphy, MA, Pan Y, Pasmore M, DiOrio JP. "Correlative Imaging of Culturable and Non-Culturable bacteria". *Micros Microanal* 19 (Suppl 2) (2013): 270-271

Stojanovic, LL, Murphy MA, Motlagh D, DiOrio JP. Correlative Imaging of CD34 Positive Peripheral Blood Stem Cells. *Micros Microanal* 19 (Suppl 2) (2013): 282-283

Green JB, Lin R, Francis-Sedlak M, DiOrio JP, Murphy MA, Strathmann S, Stojanovic L, Mantei J. Correlative Imaging to Probe Heterogeneity of Cross-linked Gelatin. *Micros Microanal* 19 (Suppl 2) (2013): 268-269

Lee, SE, Bairstow SF, Werling JO, Chaubal MV, Lin L, Murphy MA, DiOrio JP, Gass J, Rabinow B, Wang X, Zhang XY, Yang Z, Hoffmann R. Paclitaxel Nanosuspensions for Targeted Chemotherapy – Nanosuspension Preparation, Characterization, and Use. *Pharmaceutical Development and Technology*. Published On-line (April 25) (2013): 1-16

Macasev D, DiOrio JP, Gugerell A, Goppelt A, Gulle H, Bittner M. Cell Compatibility of Fibrin Sealants: In Vitro Study with Cells Involved in Soft Tissue Repair. *Journal of Biomaterials Applications* 26(2) (2011): 129-149

DiOrio JP, Delmotte Y, Murphy MA, Strathmann S, Stojanovic L, Yardimci A, McCoy J, Yang Z, Stover A, Campo L, Brannan L, Campbell J, Donovan S. Correlative Imaging to Study Hemostats. *Microscopy and Microanalysis* 16 (Supp 2) (2010): 656-657

Mosesson M, Cooley B C, Hernandez I, DiOrio J P, Weiler H. Thrombosis Risk Modification in Transgenic Mice Containing the Human Fibrinogen Thrombin-Binding Gamma Prime Sequence. *Journal of Thrombosis and Haemostasis* 7 (1) (2009): 102-110

Murphy MA, DiOrio JP, Stojanovic L, Yardimci A, DelCastillo J, Chen S-C. Complimentary Microscopic Techniques and Computational Fluid Dynamic Analysis of Blood Flow in a Medical Device. *Micros. Microanalysis* 12 (Suppl 2) (2006): 1640 CD

Siebenlist, KR, Mosesson MW, Hernandez I, Bush L, Di Cera E, Shainoff JR, DiOrio JP, Stojanovic L. Studies on the Basis for the Properties of Fibrin produced from Fibrinogen-Containing Y' Chains. *Blood* 106 (#8) (2005): 2730-2736

DiOrio JP, Stojanovic L, Yardimci A, Amrani DL, Helgerson S, Vega F. Electron Microscopic Characterization of a Gelatin Matrix/Thrombin Hemostat. *Micros. Microanalysis* 11 (Suppl 2) (2005): 178-179

Mosesson MW, DiOrio JP, Hernandez I, Hainfeld JF, Wall JS, Grieninger G. The Ultrastructure of Fibrinogen-420 and the Fibrin-420 Clot. *Biophys.Chem.* 112 (2-3) (2004): 209-214

Helgerson SL, Seelich T, DiOrio JP, Tawil B, Bittner K. Fibrin. In: *Encyclopedia of Biomaterials and Biomedical Engineering*. Marcel Dekker Inc. Publisher, New York, New York (2004): 603-610

Amrani DL, DiOrio JP, Delmotte Y. Wound Healing: Role of Commercial Fibrin Sealants. *Annals of New York Academy of Sciences.* 396 (2001): 566-579. Cover SEM micrograph with MW Mosesson

Meh DA, Mosesson MW, Siebenlist KR, Simpson-Haidaris PJ, Brennan SO, DiOrio JP, Thompson K, Di Minno G. Fibrinogen Naples I (B β A 68T) Nonsubstrate Thrombin-Binding Capacities. *Thrombos. Res.* 103 (2001): 63-73

Meh DA, Mosesson MW, DiOrio JP, Siebenlist KR, Amrani DL, Stojanovic L. Disintegration and Reorganization of Fibrin Networks during Tissue-type Plasminogen Activator-Induced Clot Lysis. *Blood Coagulation and Fibrinolysis* 12 (2001): 1-11

Siebenlist KR, Mosesson MW, Meh DA, DiOrio JP, Albrecht RM, Olson JD. Coexisting Dysfibrinogenemia (γ R275C) and Factor V Leiden Deficiency Associated with Thromboembolic Disease (Fibrinogen Cedar Rapids). *Blood Coag. Fibrinolysis* 11(3) (2000): 293-304]

DiOrio JP, Mosesson MW, Hernandez I, Sugo T, Matsuda M. Fibrinogen Marburg Fibrin Network Structure. *Micros. Microanalysis* 5 (2) (1999): 1120-1121

Sugo T, Nakamikawa C, Takano H, Mimuro J, Yamaguchi S, Mosesson M.W. Meh D A, DiOrio JP, et al. Fibrinogen Nigata with Impaired Fibrin Assembly: An Inherited Dysfibrinogen. *Blood* 94 (11) (1999): 3806-3813

DiOrio JP, Mosesson MW, Matsuda M. Fibrinogen Kurashiki Fibrin Network Structure. *Micros. Microanalysis* 4 (2) (1998): 1160-1161

Murphy MA, DiOrio JP. A Novel Technique to Determine Platelet Deposition on an Experimental Nylon Membrane Using LVSEM and TEM. *Micros. Microanalysis* 4 (2) (1998): 848-849

Amrani DL, Lee C, Earles K, DiOrio J, Murphy M, Yang J, Rubalcaba S, LiVecchi A. An In Vitro Bovine Pericardial Hemocompatibility Testing System. *Jour Heart Valve Disease* 7 (1998): 268-272

DiOrio JP, Mosesson MW, Siebenlist KR, Olson JD, Hainfeld JF, Wall JS. The Basis for Fibrinogen Cedar Rapids (γ R275C) Fibrin Network Structure. *Proced Microscopy and Microanalysis* San Francisco Press (1996): 928-929

DiOrio JP. *Seminars in Thromb Hemostasis*. 21(Supp 2) (1995): Cover Photo

Mosesson MW, Siebenlist KR, DiOrio JP, Matsuda M, Hainfeld J, Wall JS. The Role of Fibrinogen D Domain Intermolecular Association Sites in the Polymerization of Fibrin and Fibrinogen Tokyo II. *J Clin Invest* 96 (1995): 1053-1058

Mosesson MW, DiOrio JP, Siebenlist KR, Wall JS, Hainfeld JF. Evidence for a Second Type of Fibril Branch Point in the Fibrin Polymer Network, the trimolecular junction. *Blood* 82 (1993): 1517-1521

Siebenlist KR, Mosesson MW, DiOrio JP, Soria J, Soria C, Caen JP. The Polymerization of Fibrinogen Dusart after Removal of the A Alpha Chain. *Blood Coagulation and Fibrinolysis* 4 (1993):61-65

Koopman J, Haverkate F, Grimbergen J, Lord ST, Mosesson MW, DiOrio JP, Siebenlist KS, Legrand C, Soria J, Soria, Caen JP. The Molecular Basis for Fibrinogen Dusart (A α 554 Arg to Cys) and its Association with Abnormal Fibrin Polymerization and Thrombophilia. *J Clin Invest* 91 (1993):1637-1643

DiOrio JP, Siebenlist KR, Terukina S, Yamazumi K, Matsuda M, Mosesson MW. The Ultrastructure of Fibrin Prepared from Fibrinogen Asahi (γ 310 Met to Thr) and Fibrinogen Morioka (γ 275 Arg to Cys). *Proc 52nd Ann Mtg Microscopy Society of American (EMSA)* San Francisco Press (1992): 1090-1091

Siebenlist KR, DiOrio JP, Budzynski AZ and Mosesson MW. The Polymerization and Thrombin Binding Properties of Des B(β 1-42) Fibrin. *J Biol Chem* 265 (30) (1990): 18650-18655

Mosesson MW, Siebenlist KR, DiOrio JP, Budzynski AZ. Studies on the Conversion of Des B (β 1-42) Fibrinogen to Fibrin and the Thrombin Binding Properties of Des B (β 1-42) Fibrin. In: Fibrinogen 4; Current, Basic and Clinical Aspects. (Matsuda M, Iwanaga S, Takada A, and Henschen A, eds) Elsevier Science Pub, NY (1990): 13-20

Mosesson MW, Fass DN, Lollar P, DiOrio JP, Parker CG, Knutson GJ, Hainfeld JF, Wall JS. Structural Model of Factors VIII and VIIIa based on Scanning Transmission Electron Microscope (Stem) Images and Stem Mass Analysis. J Clin Invest 85 (1990): 1983-1990

Benecky MJ, Kovenbach CG, Wine RW, DiOrio JP, Mosesson MW. Human Plasma Fibronectin Structure Probed by Steady-State Fluorescence Polarization: Evidence for a Rigid Oblate Structure. Biochemistry 29 (12) (1990): 3082-3091

Mosesson MW, Church WR, DiOrio JP, Krishnaswamy S, Mann KG, Hainfeld JF, Wall JS. Structural Model of Factors V and Va Based on Scanning Transmission Electron Microscope (Stem) Images and Stem Mass Analysis. J Biol Chem 265(15) (1990): 8863-8868

Siebenlist KR, Mosesson MW, DiOrio JP, Tavori S, Tatarsky I, Rimon A. The Polymerization of Fibrin Prepared from Fibrinogen Haifa (γ 275 Arg to His). Thromb Haemostas 62(3) (1989): 875-879

Mosesson MW, Siebenlist KR, Amrani DL, DiOrio JP. Identification of Covalently Linked Trimeric and Tetrameric D Domains in Cross Linked Fibrin. Proc Natl Acad Sci (USA) 86 (1989):1113-1117

Lazarovici P, Fujita K, Contreras ML, DiOrio JP, Lelkes PI. Affinity Purified Tetanus Toxin Binds to Isolated Chromaffin Granules and Inhibits Catecholamine Release in Digitonin-Permeabilized Chromaffin Cells. Fed Eur Biochem Soc 253 (1,2) (1989): 121-128

Siebenlist KR, Mosesson MW, DiOrio JP, Tavori S, Tatarsky I, Rimon A. Studies on the Polymerization of Fibrin (γ 275 Arg to His). In: Fibrinogen 3. Biochemistry, Biological Functions, Gene Regulation and Expression (Mosesson MW, Amrani DL, DiOrio JP, Siebenlist KR, eds), Elsevier Science Publishers, NY, (1988): 99-103

Siebenlist KR, Mosesson MW, DiOrio JP, Tavori S, Tatarsky I and Rimon A. Studies on the Polymerization of Fibrin Haifa (γ 275 Arg to His). In: Fibrinogen 3. Biochemistry, Biological Functions, Gene Regulation and Expression (Mosesson MW, Amrani DL, DiOrio JP, Siebenlist KR, eds) Elsevier Science Pub, NY (1988): 271-274

Mosesson MW, Siebenlist KR, Amrani DL, DiOrio JP. Evidence for the Existence of Trimeric and Tetrameric Plasmic D Fragments Derived from Fibril Junctions or Trifunctional Branch Points in the Cross Linked Fibrin Matrix. In: Fibrinogen 3. Biochemistry, Biological Functions, Gene Regulation and Expression (Mosesson MW, Amrani DL, DiOrio JP, Siebenlist KR, eds) Elsevier Science Pub, NY (1988): 99-104

Mosesson MW, DiOrio JP, Muller MF, Shainoff JR, Siebenlist KR, Amrani DL, Homandberg GA, Soria J, Soria C, Samama M. Studies on the Ultrastructure of Fibrin Lacking Fibrinopeptide B (β -Fibrin). Blood 69(4) (1987): 1073-1081

Mosesson MW, Siebenlist KR, DiOrio JP, Hainfeld JF, Wall JS, Soria J, Soria C, Samama M. Evidence that Proximal NH₂- Terminal Portions of Fibrinogen Metz (A α 16 Arg to Cys) A α chains are Oriented in the Same Direction. In: Fibrinogen and its Derivatives, G. Muller-Berghaus et al., eds., Elsevier Science Pub (1986): 3-15

Mosesson MW, Nesheim ME, DiOrio JP, Hainfeld JF, Wall JS, Mann KG. Studies on the Structure of Bovine Factor V by Scanning Transmission Electron Microscopy. Blood 65(5) (1985):1158-1162

Waring GL, DiOrio JP and Hennen S. Isolation of a Germ Line Dependent Female Sterile Mutation that Affects Yolk Specific Sequestration and Chorion Formation in Drosophila. Devel Biol 100 (1983):451-463

Ellis LC, DiOrio JP, Rustioni A. Thalamic Projecting Neurons in the Feline Nucleus Cuneatus. an HVEM study with the HRP technique. J. Neurocytology 11 (1982): 3-17

DiOrio JP, Millington WF. Dictyosome Formation during Reproduction in Colchicine-Treated Pedicium Boryanum (hydrodictyaceae). Protoplasma 97 (1978): 329-336

Patents:

Issued:

Delmotte Y, DiOrio J. Fibrin Material and Method for Producing and Using the Same. United States Patent 6,965,014. 11-15-2005

Pennington D, Yardimci A, Amrani D, Bilstad A, Delmotte Y, DiOrio J, Peterson R, Prybell J, Slepicka J, Stadler C, Womelsdorf J. Mechanical breakup unit for biochemically reactive fluid delivery device. US Patent 6,835,186. 12-28-2004.

Delmotte Y, Bilstad A, Amrani D, DiOrio J, Yardimci A, Pennington D W, Slepicka J, Stadler C. Fibrin Delivery Device and Method for Forming Fibrin on a Surface. US Patent 6,461,325. 10-08-2002.

Delmotte Y., Bilstad A, Amrani D, Kennedy M, and DiOrio J. Fibrin Delivery Device and Method for Forming Fibrin on a Surface. US Patent 5,989,215. 11-23-1999.

In Progress:

Motlagh D, Amrani D L, DiOrio JP. Using a Scaffold Composing Fibrin for Delivery of Stem Cells. Publication Application # 20100028311 02-04-2010

Delmotte Y, DiOrio J. Fibrin Material and Method for Producing and Using the Same. Publication Application # 20060134094 06-22-2006

Delmotte Y, DiOrio J. Fibrin Material and Method for Producing and Using the Same. Publication Application # 20050271646 12-08-2005

Society Memberships/Affiliations

Current member of Microscopy Society of America and Midwest Microscopy and Microanalysis Society

Past chair for Microscopy Society of America Focus Interest Groups

Past member of advisory board for Madison College (Madison WI) Electron Microscopy Tech Program

Past Leader of the Pharmaceutical Sciences Focus Interest Group of the Microscopy Society of America and Co-chair of all the MSA Focus Interest Groups.

Past President and Biological Director of Midwest Microscopy and Microanalysis Society

Co - Chair of the Biopharma Imaging Session at the National Microscopy and Microanalysis Meeting in Fort Lauderdale, Florida, August 2007

Co –Chair of the Biopharma Imaging Session at the National Microscopy and Microanalysis Meeting in Chicago Illinois. August 2006

Co –Chair of Local Arrangement Committee for National Microscopy and Microanalysis Meeting in Chicago, August 2006