

CURRICULUM VITAE

Gary B. Smejkal, M.S.
32 Overlook Circle, Hudson, NH 03051
TEL: (603) 880-5195; CELL: (603) 566-5374
E-Mail: smejkal.gary@gmail.com

CAREER EXPERIENCE:

- 2008-present Visiting Scientist, **Harvard School of Public Health**, Department of Genetics & Complex Diseases, Boston MA.
- 2006-present Affiliate Associate Professor, **University of New Hampshire**, Department of Biochemistry and Molecular Biology, Durham, NH.
- 2008-present **Politecnico di Milano**, Department of Chemistry, Materials and Chemical Engineering, Milan, Italy.
- 2005-2008 Senior Scientist, **Pressure Biosciences**, Proteomics and Small Molecules Applications Laboratory, Woburn, MA.
- 2001-2005 Senior Scientist, **Proteome Systems**, Research and Development, Woburn, MA.
- 1999-2001 **Cleveland State University**, Department of Chemistry, Cleveland, OH.
- 1997-2000 **Cleveland Clinic Foundation**, Department of Clinical Pathology, Cleveland, OH.
- 1997-2001 **Case Western Reserve University**, Department of Biomedical Engineering, Cleveland, OH.
- 1989-1997 **Cleveland Clinic Foundation**, Lerner Research Institute, Department of Cell Biology, Cleveland, OH.
- 1988-1989 **American Red Cross**, Blood Bank, Cleveland, OH.
- 1986 **University Hospital of Cleveland**, Clinical Cytogenetics Laboratory, Cleveland, OH.

GRANTS, NOMINATIONS, AND AWARDS:

- 2007 Review Committee, Academy of Sciences of the Czech Republic Grant Agency.
- 1999-2000 Cleveland Clinic Foundation, Research Programs Committee (RPC) Grant No. 6299. *Rapid High Resolution Electrophoresis for the Analysis of Multimeric von Willebrand Factor as a Clinical Diagnostic for von Willebrand Disease.*

EDITORIAL EXPERIENCE:

- 2005 Editor of the book *Separation Methods in Proteomics*, CRC Press.
- 2004-2008 Editorial Advisory Board for the journal *Expert Review of Proteomics*.
- 2005-2008 Editorial Advisory Board for the journal *Expert Opinion on Drug Discovery*.
- 2002-2008 Editorial Board for the *Japanese Journal of Electrophoresis*.
- 1994-2008 Reviewer for the journals *Electrophoresis*, *Proteomics*, *BioTechniques*, *Journal of Proteomic Research*, *Analytica Chimica Acta*, and *Biochemical and Biophysical Methods*.

AFFILIATIONS:

- 2006-2008 Swiss Proteome Society
- 2005-2008 U.S. Human Proteome Organization (HUPO)
- 1996-2004 American Electrophoresis Society

PUBLICATIONS:

BOOKS:

1. **Smejkal GB** (2005). Protein Staining in Polyacrylamide Gels. *Separation Methods in Proteomics*, CRC Press, Taylor & Francis, Boca Raton, pp 439-452.
2. **Smejkal GB** and Lazarev AV (2005). Evolutionary Nature of the Proteomic Revolution. *Separation Methods in Proteomics*, CRC Press, Taylor & Francis, Boca Raton, Book Preface.
3. Bhattacharya SK, Crabb JS, **Smejkal GB**, Annangudi SP, West KA, Gu X, Sun J, Bonilha VL, Shadrach K, Hollyfield JG, and Crabb, JW (2005). Optic Nerve Fractionation for Proteomics. *Separation Methods in Proteomics*, CRC Press, Taylor & Francis, Boca Raton, pp 135-155.

REVIEWS:

4. **Smejkal GB**, Poinar GO, Righetti PG (2009). Will Amber Inclusions Provide the First Glimpse of a Mesozoic Proteome *Expert Rev. Proteomics* 6, 1-4.
5. **Smejkal GB**, Schweitzer MH (2007). Will Current Technologies Enable Dinosaur Proteomics? *Expert Rev. Proteomics*, 4, 695-699.
6. **Smejkal GB** (2006). I'm an -Omics, You're an -Omics. *Expert Rev. Proteomics*, 3, 383-385.
7. **Smejkal GB** (2006). The Promise of Gel-Based Proteomics. *Expert Opinion on Drug Discovery*, 1, 7-10.
8. **Smejkal GB**, Lazarev A (2005). Solution Phase Isoelectric Fractionation in the Multi-Compartment Electrolyzer: A Divide and Conquer Strategy for the Analysis of Complex Proteomes. *Briefings in Functional Genomics and Proteomics*, 4, 76-81.
9. **Smejkal GB** (2004). The Coomassie Chronicles: Past Present, and Future Perspectives in Polyacrylamide Gel Staining. *Expert Rev. Proteomics* 1, 381-387.

JOURNALS:

10. Gross V, Carlson G, Kwan AT, **Smejkal GB**, Freeman E, Ivanov AR, Lazarev A (2008). Tissue Fractionation by Hydrostatic Pressure Cycling: The Unified Sample Preparation Technique for Systems Biology Studies. *J Biomolecular Techniques*, 19, 187-197.
11. Clements RT, **Smejkal GB**, Sodha NR, Ivanov AR, Asara J, Feng J, Lazarev A, Gautam S, Senthilnathan V, Khabbaz KR, Bianchi C, Sellke FW (2008). Pilot Proteomic Profile of Differentially Regulated Proteins in Human Myocardium Before and After Cardiac Surgery Utilizing Cardioplegia and Cardiopulmonary Bypass. *Circulation*, S24-S31.
12. Bauer DJ, **Smejkal GB**, Ringham HN, Kwan AT, Witzmann FA, Kinter MT, Thomas WK (2008). Two-Dimensional Gel Electrophoresis Analysis of Individual Daphnia. *J. Experimental Zoology*, in review.
13. **Smejkal GB**, Robinson MH (2007). Tris Interference in IEF and 2-DE. *Electrophoresis*, 28, 1601-1606.
14. Tao F, Li C, **Smejkal G**, Lazarev A, Lawrence N, Schumacher R (2007). Pressure Cycling Technology (PCT) Applications in the Extraction of Biomolecules from Challenging Biological Samples. *Proceedings of the Fourth International Conference of High Pressure Bioscience and Biotechnology*, 1, 166-173.
15. **Smejkal G**, Witzmann FA, Ringham H, Small D, Chase S, Behnke J, Ting E (2007). Sample Preparation for Two-Dimensional Gel Electrophoresis using Pressure Cycling Technology. *Anal. Biochem.*, 363, 309-311.
16. Ringham H, Pedrick N, **Smejkal GB**, Behnke J, Witzmann FA (2007). Application of pressure cycling technology to tissue sample preparation for 2-DE. *Electrophoresis*, 28, 1022-1024.
17. **Smejkal GB**, Robinson MH, Lawrence NP, Tao F, Saravis CA, Schumacher RT (2006). Increased Protein Yields From Escherichia coli Using Pressure Cycling Technology. *J. Biomolecular Techniques*, 17, 159-161.

18. **Smejkal GB**, Li C, Robinson MH, Lazarev A, Lawrence N, Chernokalskaya E. (2006). Simultaneous Reduction and Alkylation of Protein Disulfides in a Centrifugal Ultrafiltration Device Prior to Two-Dimensional Gel Electrophoresis. *J. Proteomic Res.*, 5, 983- 987.
19. **Smejkal GB**, Lazarev A, Robinson MH (2004). Comparison of Fluorescent Stains: Relative Photostability and Differential Staining of Proteins in Two-Dimensional Gels. *Electrophoresis*, 25, 2511-2519.
20. **Smejkal GB**, Lazarev A, Robinson MH, McCarthy JT (2004). Comparison of ProteomIQ Blue with Fluorescent Dyes for Staining Two-Dimensional Gels. *PharmaGenomics*, 4, 14-15.
21. **Smejkal GB**, McCarthy JT, Herbert BR (2003). Sample Prefractionation in the Multi-Compartment Electrolyzer. *PharmaGenomics*, 3, 24.
22. **Smejkal GB** (2003). Development of New Colloidal Stains: Narrowing the Gap Between Coomassie and Silver Staining Sensitivity. *Mol. Cell. Proteomics*, 2, 851.
23. **Smejkal GB**, Shainoff JR, Kottke-Marchant KM (2003). Rapid High Resolution Electrophoresis of Von Willebrand Factor Using a Thermopipetted Gel Apparatus. *Electrophoresis*, 24, 582-587.
24. **Smejkal GB**, Hoff HF (2003). Use of Formazan Dye Zincon for Staining Proteins in Polyacrylamide Gels. *BioTechniques*, 34, 486-488.
25. **Smejkal GB**, Elster TE (2002). Simple Modification of Electrodes for Measuring Conductivity Directly in Gels. *Anal Biochem.*, 305, 117-118.
26. Shainoff JR, **Smejkal GB**, DiBello PM, Sung SS, Bush LA, Dicera E (2002). Allosteric Effects Potentiating the Release of the Second Fibrinopeptide A from Fibrinogen by Thrombin. *J. Biol. Chem.*, 277, 19367-19373.
27. Berggren KN, Schulenberg B, Lopez ML, Steinberg TH, Bogdanova A, **Smejkal GB**, Wang A, Patton, WF (2002). An Improved formulation of SYPRO Ruby Protein Gel Stain: Comparison of the Original Formulation and with a Ruthenium II Tris (Bathophenanthroline Disulfonate) Formulation. *Proteomics*, 2, 486-498.
28. **Smejkal GB**, Shainoff JR (2002). Direct Chemiluminescent Immunodetection of Proteins in Agarose Gels. *Electrophoresis*, 23, 979-984.
29. **Smejkal GB** (2001). Geometry of the SDS Micelle. In *The Proteome Revisited: Theory and Practice of All Relevant Electrophoretic Steps*, P.G. Righetti, A.V. Stoyanov, and M. Y. Zhukov. J. Chromatography Library, 63, book cover.
30. **Smejkal GB** (2001). Color Transitional Dyes as Indicators of Ionic Boundaries in Sodium Dodecylsulfate Polyacrylamide Gel Electrophoresis. *Japanese J. Electrophoresis*, 45, 75-81.
31. Shainoff JR, **Smejkal GB**, DiBello PM, Chase B, Mitkevich OV, Lill H (2001). The Fibrin Intermediate: Its Place in the Fibrinogen-Fibrin Transformation. *N.Y. Acad. Sci.*, 936, 147-166.
32. **Smejkal GB**, Kaul C (2001). Stability of Nitro Blue Tetrazolium-Based Alkaline Phosphate Substrates in Western Blotting. *J. Histochem. Cytochem.*, 49, 1189-1190.
33. Shainoff JR, Ratnoff OD, **Smejkal GB**, DiBello PM, Welches WR, Lill H, Mitkevich OV, Periman P (2001). Confirmation of Mendelian Properties of Heterodimeric Fibrinogen Molecules in a Heterozygotic Dysfibrinogenemia, "Fibrinogen Amarillo", using GPRphoresis to Differentiate Semifibrin Molecules from Fibrinogen and Fibrin. *Thrombosis Research*, 101, 91-99.
34. Shainoff JR, **Smejkal GB**, Lishko V (2000). Isolation of the Fibrin Intermediate Lacking Only One of the Two A-Fibrinopeptides. *Biophysical Journal*, 78, 291.
35. **Smejkal GB** (2000). Parameters Governing Packing of Dodecylsulfate Anions into Micelles. *BioTechniques*, 28, cover.
36. Mitkevich OV, Shainoff JR, DiBello PM, Yee VC, Teller DC, **Smejkal GB**, Bishop PD, Kolotushkina IS, Fickenscher K, Samokhin GP (1998). Coagulation Factor XIIIa Undergoes a Conformational Change Evoked by Glutamine Substrate: Studies on Kinetics of Inhibition and Binding of XIIIa by a Cross-Reacting Anti-Fibrinogen Antibody. *J. Biol. Chem.*, 273, 14387-14391.
37. Shainoff JR, **Smejkal GB**, DiBello PM, Dempfle CE, Lill H, Dicera E (1998). Positive Identification of the Fibrin Intermediate, α -Profibrin, Arising from Cleavage of One Fibrinopeptide A from Fibrinogen. *Blood Coagulation & Fibrinolysis*, 9, 677.

38. Ratnoff OD, Shainoff JR, Welches WR, **Smejkal GB**, DiBello PM, Lill H, Periman P (1998). Distributive Incorporation of Mutant A α -chains into Fibrinogen Molecules. Identification of Mendelian Proportions of Variants in a Heterozygous Dysfibrinogenemia, Fibrinogen Amarillo by GPR-phoresis. *Blood Coagulation & Fibrinolysis*, 9, 683.
39. **Smejkal GB**, Shainoff, JR (1997). Enhanced Digital Imaging of Diaminobenzidine-Stained Immunoblots. *BioTechniques*, 22, 462.
40. **Smejkal GB**, Hoppe G, Hoff HF (1997). Filipin-Stained Thin Layer Chromatogram. *EMBO Journal*, 16, cover.
41. Shainoff JR, **Smejkal GB**, Mitkevich OV, DiBello PM (1996). Preparative Electrophoresis on Linear Polyacrylamide-Agarose Composite Gels. *Electrophoresis*, 17, 179-184.
42. **Smejkal GB**, Hoppe G, Hoff HF (1996). Use of Filipin as a Fluorescent Probe of Lipoprotein-Derived Sterols on Thin Layer Chromatograms. *Anal. Biochem.*, 239, 115-117.
43. **Smejkal GB** (1996). Sodium Dodecylsulfate Polyacrylamide Gel Electrophoregram of Transglutaminase-Crosslinked Human Fibrinogen. *BioTechniques*, 21, cover.
44. Shainoff JR, **Smejkal GB**, DiBello PM, Mitkevich OV, Levy PJ, Dempfle CE, Lill H (1996). Isolation and Characterization of the Fibrin Intermediate Arising from Cleavage of One Fibrinopeptide A from Fibrinogen. *J. Biol. Chem.*, 271, 24129-24137.
45. **Smejkal GB**, Snadjar RM, Hoff HF (1996). Visualization of Unstained Protein Bands on Polyvinylidene Fluoride Membranes Rehydrated in Tween-20. *BioTechniques*, 21, 232-233.
46. Mitkevich OV, Shainoff JR, **Smejkal GB**, DiBello PM, Im MJ (1996). Fibrinogen β -Chain Crosslinking by Tissue Transglutaminases. *Blood Coagulation & Fibrinolysis*, 8, 11.
47. **Smejkal GB**, Abood DJ, Cressman MD, Hoff HF (1995). Isolation of Multiple Lipoprotein[a] Charge Forms in Human Plasma By Liquid Phase Isoelectrofocusing. *BioRad Preparative Electrophoresis Review*, 1899, 1-2.
48. Mitkevich OV, Shainoff JR, **Smejkal GB**, DiBello PM, Kolotushkina IS, Yee VC, Teller DC (1995). Anti-fibrinogen A α 529-539 Antibody Inhibits fXIIIa Catalytic Activity Towards Both Fibrinogen-related and Non-fibrinogen Substrates: Implications for Structure of the C-terminal Domain of fXIIIa. *Blood Coagulation & Fibrinolysis*, 6, 346.
49. Shainoff JR, **Smejkal GB**, DiBello PM (1995). Fibrin Complexes and Fibrinogen Dimers, Distinct Harbingers of Thrombosis and Vascular Disease: Resolution by GPR-phoresis. *FASEB Journal*, 9, 1500.
50. Shainoff JR, **Smejkal GB**, DiBello PM, Bulloch RE, Levy PJ, Jang Y, Lill, H. (1995). A Non-Aggregating Fibrin Precursor Identified in Abnormal Plasmas and Thrombin Reactions. *Thrombosis Haemostasis.*, 73, 1225.
51. **Smejkal GB**, and Hoff HF (1994). Filipin Staining of Lipoproteins in Polyacrylamide Gel: Sensitivity and Photobleaching of the Fluorophore and Its Use in a Double Staining Method. *Electrophoresis*, 15, 922-925.
52. Hoff HF, O'Neil JA, **Smejkal GB**, Yashiro A (1994). Immunochemically Detectable Lipid Free Apo[a] in Plasma and in Human Atherosclerotic Plaques. *Phys. Chem. Lipids*, 67, 271-280.
53. **Smejkal GB**, Hoff HF (1994) Cholesterol-Specific Probe for Lipoproteins Immobilized on Nitrocellulose Membranes, *BioTechniques*, 16:68-70.
54. Hoff HF, **Smejkal GB** (1994). Co-localization of Molecular Mass Marker Proteins on Western Blots. *BioTechniques*, 15:796-798.
55. **Smejkal GB**, Gallagher S (1994). Determination of Semi-Dry Transfer Efficiency with Transverse Gradient Gel Electrophoresis. *BioTechniques*, 15, 196-202.
56. Mitkevich OV, Shainoff JR, DiBello PM, **Smejkal GB**, Bulloch RE (1994). Monoclonal Anti-A α inhibits Hybrid α - γ Chain Crosslinking of Fibrinogen by Both Factor XIIIa and Tissue Transglutaminase. *Blood Coagulation & Fibrinolysis*.
57. **Smejkal GB**, Hoff HF (1992). Transverse Pore Gradient Gel Electrophoresis of Lipoprotein[a] Using Methylenebisacrylamide Gradients. *Electrophoresis*, 13, 102-103.
58. O'Neil JA, **Smejkal GB**, Yashiro A, Hoff HF (1992). ApoB in Lp[a] Expresses Epitopes Not Found in ApoB of LDL. *FASEB Journal*, 6, 1387.
59. O'Neil JA, Pepin JM, **Smejkal GB**, Gordon EA, and Hoff HF (1990). Structural Characteristics of Lp[a] Extracted from Human Atherosclerotic Lesions. *Arteriosclerosis*, 10, 812.

EDUCATION:

1997-2001 Cleveland State University, Cleveland, OH.
1985-1987 Case Western Reserve University, Cleveland, OH.
1983-1987 Cuyahoga Community College, Cleveland, OH.
1975-1976 Cleveland State University, Cleveland, OH.

REFERENCES:

Dr. Kelly Thomas, Director
Hubbard Center for Genome Studies, University of New Hampshire, Durham, NH.
(603) 862-2470

Dr. Alexander Lazarev, Director, Research and Development
Pressure Biosciences, South Easton, MA.
(781) 640-8436

Dr. Mary F. Lopez, Director, Biomarker Research Initiatives in Mass Spectrometry
Thermo Fisher Scientific, Cambridge, MA.
(617) 225-0753

Professor Pier Giorgio Righetti
Politecnico di Milano, Department of Chemistry, Materials and Engineering Chemistry, Milan, Italy
(011) 39-02-23993045