

BARRETT E. RABINOW, PhD

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PHARMACEUTICAL CONSULTANT

Leverages Creativity and Scientific Expertise

Versatile, creative Ph.D. Pharmaceutical Scientist provides innovative analysis. Strategic consulting expertise in R&D, kinetics and mechanism of chemical reactions, degradation, leaching, contamination, injectable drug formulation, sterile manufacturing, and packaging. Known for collaborative communication with teams and achieving resolution of pervasive pharmaceutical issues.

Adept at speaking and presenting on complex scientific topics. Innovative patent-holder, well published in numerous journals. Known both as a collegial organizer of multi-functional teams to attack nebulous problems, and as an independent contributor of novel solutions. Appreciative of FDA and MHRA mentoring in honing fast thinking and strategizing skills while maintaining grace under pressure.

Pharmaceutical Problem Solving

Patent Analysis | R&D Acquisition Analysis | Comprehensive Program Plan Development | Expert Witness

PROFESSIONAL EXPERIENCE

BARRETT E RABINOW LLC, Skokie, IL
Expert Consulting

2017-PRESENT

BioPhia Consulting, Lake Forest, IL
Principal Consultant, Pharmaceutical R&D, Technology Assessment, Manufacturing Troubleshooting

2016-Present

BAXTER HEALTHCARE CORPORATION, Round Lake, IL
Medication Delivery Division

1977-2016

Baxter Distinguished Scientist

2006 – 2016

Developed global technical vision for new product / process design, incorporating multiple disciplines and has broad business applications. Evaluated numerous business opportunities from technical and patent perspective. Provided broad multi-disciplinary knowledge of advanced fields. Energized and mentored technical talent. Led technical feasibility analysis of new, unproven technologies.

- Developed concept, and executed animal studies demonstrating reduction of toxicity for key product with small, simple design change; issued patent.
- Devised HIV drug delivery platform, in development by major university and NIH.
- Created nanosuspension drug formulation platform, treating antimicrobial infections normally resistant to non-formulated drugs; issued patent.
- Attracted 9 clients and clinical production, growing business by conducting 75 technical sales presentations.
- Conceived and developed rapid testing approach for broad IV solution product lines, expediting change control, reducing stability testing, showing compliance with Good Distribution Practices, and minimizing testing for elemental impurities, and leachables. Presented to the UK Medicines and Health Care Regulatory Agency (MHRA) who endorsed concept.
- Troubleshoot complex corrosion issue affecting manufacturing process, and implemented it for key product line.

Senior Director, Strategic Technical Development

1999 – 2006

Led corporate troubleshooting teams and task forces of industry-wide organizations for the most serious chemical problems of high commercial impact. Developed novel methods, leading-edge techniques to solve problems. Negotiated favorable outcomes for company and industry with FDA.

- Improved manufacturing processes resolving pH and particulate issues, retiring imminent product recall issues for major, strategic product lines.
- Developed industry position / white paper and presented to FDA on storage labeling, saving millions of dollars in unnecessary costs.

Director , Strategic Technical Development	1995– 1998
Director , Strategic Development	1991 –1995
Director , Chemistry R & D - Identified anti-adhesion as a therapeutic concept, eventuating in a product. - Identified source of contaminant affecting 17 plants, allaying worldwide regulatory concern. - Launched IV container extractable program that has become the standard of the industry.	1983 – 1991
Associate Director , Analytical & Technical Services Reformulated company's most lucrative drug, satisfactorily retiring an imminent FDA recall.	1982– 1983
Manager , Analytical & Technical Services Resolved pervasive field issue of color formation in product, without reformulation	1978– 1982
Supervisor , Amino Acid Analysis Increased batch analysis rate 50-fold, eliminating significant delays in product release.	1977– 1978
Norwegian-American Hospital , Chicago, IL Director of Chemistry	1976 - 1977

BAXTER AWARDS

- Outstanding Innovation Award for Nanosuspension Formulation of Indibulin, 2004
- Outstanding Innovation – Control of Itraconazole Nanosuspension Through Polymorph Control, 2003
- Outstanding Technical Achievement Award – Premix Pipeline Strategic Development Team, 1998
- Annual Outstanding Technical Achievement Award – Resolution of ----- Particulate Matter Issue, 1998
- Annual Outstanding Technical Achievement Award – Resolution of ----- pH Issue, 1998
- Annual Outstanding Technical Achievement Award – Heparin Dextrose Warehouse Temperature Study, 1996
- Honorable Mention Award – Innovative Regulatory Strategies, 1995
- Outstanding Technical Achievement Award – LVP Stability & Storage Conditions Position, 1994
- Scientific Contribution Award – Innovative Analytical Methodologies for Drug Development, 1992
- Distinguished Problem Solving, 1992
- Outstanding Technical Contribution – Admixed Chemotherapeutic Agents in Travenol Containers, 1985
- Baxter-Travenol Technical Achievement Award – Synthroid® Reformulation, 1983

Advisory Boards

- Advisory Board for the UNITAID funded LONGEVITY project, for development of long-acting injectable medicines for malaria prophylaxis, TB prevention and HCV therapy.
- Advisory Committee for U. Nebraska Medical Center NanoART Manufacture, Delivery and Pharmacokinetics for Optimizing Drug Adherence

PROFESSIONAL ACTIVITIES

- Parenteral Drug Association – Committee on Aluminum Methodology
- Health Industry Manufacturers' Association – Consultant and presenter to FDA on issues of aluminum methodology, toxicology, and formulations for large volume parenteral solutions, osmolality and stability storage labeling issues
- Association for the Advancement of Medical Instrumentation – Consultant on aluminum methodology and appropriate levels in dialysis solutions
- International Standards Organization – Consultant on systematizing evaluation of leachables from medical devices
- Journal of Pharmaceutical Sciences – Reviewer

EDUCATION

- **Doctor of Philosophy (PhD)**, Physical-Organic Chemistry, University of Chicago, Chicago, IL
 - Postdoctoral Fellowship in Clinical Chemistry, National Institutes of Health (NIH), Michael Reese Medical Center, Chicago, IL
 - Postdoctoral work in Electrochemistry, University of Chicago, Chicago, IL
- **Master of Science (MS)**, Organic Chemistry, University of Chicago, Chicago, IL
- **Bachelor of Arts / artium baccalaureus (AB)**, Cornell University, Ithaca, NY, Graduated *cum laude* with Distinction in all Subjects and Honors in Chemistry
- **NIH Postdoctoral Fellowship in Clinical Chemistry**, Michael Reese Hospital, Chicago, IL

PATENTS

- US 6,100,302. August 8, 2000. Biomaterials with hydrophilic surfaces.
- US 6,309,723. October 30, 2001. Propofol Formulation with Enhanced Microbial Characteristics.
- US 8,067,032. November 29, 2011. Method for preparing submicron particles of antineoplastic agents.
- US20100290983A1. Pub. Nov 18, 2010. Compositions and Methods for Drug Delivery.
- US 8,183,233. May 22, 2012. Stable Pharmaceutical Formulations.
- US 8,263,131. September 10, 2012. Method for treating infectious organisms normally considered to be resistant to an antimicrobial drug.
- EP 1,682,116. May 30, 2012. Method for preparing submicron particles of paclitaxel or docetaxel.
- US 8,333,959. December 18, 2012. Ex-Vivo application of solid microparticulate therapeutic agents.
- US 8,617,467. December 31, 2013. High-pressure sterilization to terminally sterilize pharmaceutical preparations and medical products. EP1663321B1, Pub. August 29, 2012.
- US 8,686,036. April 1, 2014. Methods of Controlling Heart Rate While Minimizing / Controlling Hypotension.
- US 8,829,047. September 9, 2014. Methods of controlling venous irritation associated with the treatment of a cardiac disorder.
- US 8,986,736. March 24, 2015. Method for delivering particulate drugs to tissues.
- US 9,044,381. June 2, 2015. Method for delivering drugs to the brain.
- US 9,084,763. July 21, 2015. Methods for treating tachycardia and/or controlling heart rate while minimizing and/or controlling hypotension
- US 9,364,443. June 14, 2016. Compositions and methods for drug delivery.
- US 9,700,866 B2 July 11, 2017. Surfactant systems for delivery of organic compounds.
- US 10,952,965 March 21, 2021. Compositions and methods for drug delivery

UNIVERSITY LECTURES

- University of Illinois College of Pharmacy, Course 594:
 - "Special Topics in Biopharmaceutical Development"
 - "Overview of Drug Development"
 - "Biopharmaceutical considerations of injectable dosage forms"
 - "Resolving formulation and manufacturing problems with parenteral pharmaceuticals"

PUBLICATIONS

- B. E. Rabinow, "Kinetic Studies of Arylcarbenes," Doctoral Thesis, presented to the University of Chicago, 1974.
- B. E. Rabinow and G. L. Closs. Kinetic Studies on Diarylcarbenes. J. Amer. Chem. Soc., 98:8190 (1976).
- B. E. Rabinow, P. W. K. Wong, E. R. Maschgan, and S. Natelson. Screening for Errors in Galactose Metabolism with the Erythrocyte. Clin. Chem., 22:2010 (1976).
- B. E. Rabinow, A. Geisel, L. E. Webb, and S. Natelson. Automated System for Infrared Spectrometric Analysis for Total CO₂ of Plasma Contained in Capillary Tubes. Clin. Chem., 23:180 (1977).
- R. Jacobus, B. Rabinow, J. Lueck. "Determination of Levothyroxine Sodium in the Drug Substance and Synthroid® Levothyroxine Sodium Tablets by Reverse Phase High-Performance Liquid Chromatography," in Proceedings of the FDA-USP Workshop on Drug & Reference Standards for Insulins, Somatotropins, and Thyroid-axis Hormones, Bethesda, MD, May 19-21, 1982, U.S. Pharmacopoeial Convention, Inc., 1982.
- B. Rabinow. "Contribution of the Trace Metal Contaminants in the Dialysis Concentrate to Dialyzing Fluid," in Issues in Hemodialysis, The Association for the Advancement of Medical Instrumentation, 1981, pp. 34-40.

- B. Rabinow, R. Payton, and N. Raghavan. A Novel Radiotracer Method for the Precise Determination of Water Vapor Transmission Rate Characteristics of Packaging Systems. *J. Pharm. Sci.*, 75:808 (1986).
- R. Payton, B. Rabinow, and N. Raghavan. Application of Radiotracer Method for Precise Determination of Water Vapor Transmission Characteristics of Unit Dose Packaging Systems. *Int. J. Pharm.*, 33:257 (1986).
- B. Rabinow, et al. Sampling and Analysis Techniques for Monitoring Serum for Trace Elements. *Clin. Chem.*, 32:1350 (1986).
- B. Rabinow, et al. Reduction of Aluminum Levels in Dialysis Fluids Through the Development and Use of Accurate and Sensitive Analytical Methodology. *J. Parenteral Science & Technology*, 41:67 (1987).

PUBLICATIONS (Continued)

- B. Rabinow, et al. Aluminum in Parenteral Products: Analysis, Reduction, and Implications for Pediatric TPN. *J. Parenteral Science & Technology*, 43:132 (1989).
- B. E. Rabinow, et al. Characterization of Cisplatin Degradation as Affected by pH and Light. *Amer. J. Hosp. Pharm.*, 48:1500 (1991).
- D.R. Jenke, E.K. Chess, D Zietlow, and B. E. Rabinow. Model for Estimating the Accumulation of Solutes Leaching from Polymeric Containers into Parenteral Solutions. *Int. J. Pharm.*, 78:115 (1992).
- B. E. Rabinow, et. al. Biomaterials with Permanent Hydrophilic Surfaces and Low Protein Adsorption Properties. *J. Biomat. Sci. Polymer Ed.*, 6:91 (1994).
- B. E. Rabinow, et. al. Biomaterials with Permanent Hydrophilic Surfaces and Low Protein Adsorption Properties in Polymer Biomaterials in Solution, as Interfaces and as Solids, eds. S. L. Cooper, C.H. Bamford and T. Tsuruta, VSP, Netherlands, 1995, pp. 109-127.
- B. E. Rabinow and T. J. Roseman. *Plastic Packaging Materials*, ch. 85, Remington: The Science and Practice of Pharmacy, 19th ed, by A. R. Gennaro, Mack Publishing Co., Edison, Pa. 1995.
- B. E. Rabinow and T. J. Roseman. *Plastic Packaging Materials*, ch. 80, Remington's Pharmaceutical Sciences 20th ed., ed. by A. R. Gennaro, Mack Publishing Co., Edison, Pa. 2000.
- B.E. Rabinow. Nanosuspensions in Drug Delivery. *Nature Reviews Drug Discovery* 3:785-796 (2004).
- B. Rabinow. NANOEDGE drug delivery solves the problems of insoluble injectable drugs. Supplement to *Scrip World Pharmaceutical News*, October 2004.
- B. E. Rabinow and T. J. Roseman. *Plastic Packaging Materials*, ch. 54, Remington: The Science and Practice of Pharmacy, 21st ed., Lippincott Williams & Wilkins, Philadelphia, Pa. 2005.
- B. Rabinow. Pharmacokinetics of drugs administered in nanosuspension. *Discovery Medicine* 5: 74-79 (2005).
- B. Rabinow and M. Chaubal. *Injectable Nanoparticles for Efficient Drug Delivery*, ch. 8 in *Nanoparticle Technology for Drug Delivery*, ed. Ram B. Gupta and Uday B. Kompella, Taylor & Francis, New York, 2006.
- B. Rabinow, M. Chaubal, J. Kipp. Excipient Selection and Criteria for Injectable Dosage Forms, ch. 16 in *Excipient Development for Pharmaceutical, Biotechnology, and Drug Delivery Systems.*, eds. A. Katdare and M. Chaubal., Informa Healthcare, New York, 2006.
- Gorantla, S., Dou, H., Boska, M., Destache, C.J., Nelson, J., Rabinow, B., Gendelman, H.E., and Mosley, R.L. Quantitative magnetic resonance and SPECT imaging for macrophage tissue migration and nanoformulated drug delivery. *J. Leukoc. Biol.*, 80: 961-964, 2006.
- H. Dou, C. Destache, J. Morehead, R. Mosley, M. Boska, J. Kingsley, S. Gorantla, L. Poluektova, J. Nelson, M. Chaubal, J. Werling, J. Kipp, B. Rabinow, H. Gendelman. Development of a macrophage-based nanoparticles platform for antiretroviral drug delivery. *Blood*, 108: 2827-2835 (2006).
- J. Kingsley, H. Dou, J. Morehead, B. Rabinow, H. Gendelman, C. Destache. Nanotechnology: A Focus on Nanoparticles as a Drug Delivery System. *J NeuroImmune Pharmacology*, 1:340-350 (2006).
- Dou, H., Limoges, J., Ellison, B., Kingsley, J.D., Zhou, Y., Destache, C.J., Chaubal, M., Werling, J., Kipp, J., Rabinow, B. and Gendelman, H.E. Laboratory investigations for the morphologic, pharmacokinetic, and anti-retroviral properties of indinavir nanoparticles in human monocyte-derived macrophages. *Virology*, 358: 148-58, 2007.
- B. Rabinow. Nanosuspensions for Parenteral Delivery, ch. 2 in *Nanoparticulate Drug Delivery Systems*, eds. Deepak Thassu, Michel Deleers, Yashwant Pathak, Informa Healthcare, New York, 2007.
- B. Rabinow, J. Kipp, P. Papadopoulos, J. Wong, J. Glosson, J. Gass, C-S Sun, T. Wielgos, R. White, C. Cook, K. Barker, K. Wood. Itraconazole IV nanosuspension enhances efficacy through altered pharmacokinetics in the rat. *Int. J. Pharm.*, 339:251-260 (2007).
- J. Wong, A. Brugger A, A. Khare, M. Chaubal, P. Papadopoulos, B. Rabinow, J. Kipp, J. Ning. Suspensions for intravenous (IV) injection: A review of development, preclinical and clinical aspects. *Adv Drug Deliv Rev.* 2008 May 22; 60(8):939-54.
- Y. Liu, M. Uberti, H. Dou, R. Banerjee, C. Grotepas, D. Stone, B. Rabinow, H. Gendelman, M. Bosca, Ingress of blood-borne macrophages across the blood-brain barrier in murine HIV-1 encephalitis. *J. Neuroimmunology*, 200: 41-52 (2008).
- H. Dou, C. Grotepas, J.M. McMillan, C. Destache, M. Chaubal, J. Werling, J. Kipp, B. Rabinow, H. Gendelman. Macrophage delivery of nanoformulated antiretroviral drug to the brain in a murine model of neuroAIDS. *J. Immunology* 183: 661 – 669 (2009).

Publications (Continued)

- Nowacek, R. Miller, J. McMillan, G. Kanmogne, R. Mosley, Z. Ma, S. Graham, M. Chaubal, J. Werling, B. Rabinow, H. Dou, & H. Gendelman. NanoART synthesis, characterization, uptake, release and toxicology for human monocyte-macrophage drug delivery. *Nanomedicine*, 4(8) 2009.
- Beduneau, Z. Ma, C. Grotepas, A. Kabanov, B. Rabinow, N. Gong, R Mosley, H. Dou, M. Boska, H. Gendelman. Facilitated monocyte-macrophage uptake and tissue distribution of superparamagnetic iron oxide nanoparticles. *PLoS ONE*, 4:e4343 (2009).
- Jeff McKee, Barrett Rabinow, Chyung Cook and Jerry Gass. Nanosuspension Formulation of Itraconazole Eliminates the Negative Inotropic Effect of SPORANOX® in Dogs. *Journal of Medical Toxicology: Volume 6, Issue 3* (2010), 331-336.
- Ari S Nowacek, JoEllyn McMillan, Reagan Miller, Alec Anderson, Barrett Rabinow, Howard E Gendelman. Nanoformulated antiretroviral drug combinations extend drug release and antiretroviral responses in HIV-1-infected macrophages: implications for neuroAIDS therapeutics. *Journal of Neuroimmune Pharmacology*, 2010; 5(4):592-601.
- S. Lee, E. Chess, B. Rabinow, G. Ray, C. Szabo, B. Melnick, R. Miller, L. Nair, E. Moore. NMR of heparin API: investigation of unidentified signals in the USP-specified range of 2.12-3.00ppm. *Anal Bioanal Chem*, 399 (2011). pp.651-662.
- Rafael F. Bressani, Ari S. Nowacek, Sangya Singh, Shantanu Balkundi, Barrett Rabinow, Joellyn Mcmillan, Howard E. Gendelman, & Georgette D. Kanmogne. Pharmacotoxicology of monocyte-macrophage nanoformulated antiretroviral drug uptake and carriage. *Nanotoxicology*. 5: 592-605 (2011).
- Lee SE, Bairstow SF, Werling JO, Chaubal MV, Lin L, Murphy MA, DiOrio JP, Gass J, Rabinow B, Wang X, Zhang Y, Yang Z, Hoffman RM. Paclitaxel nanosuspensions for targeted chemotherapy – nanosuspension preparation, characterization, and use. *Pharm Dev Technol*. 2013 Jun; 19(4):438-53.
- McKee J, Rabinow B, Daller J, Brooks B, Baumgartner B and Rohatgi P. An enantiomerically pure formulation of esmolol attenuates hypotension and preserves heart rate control in dogs. *Anesthesiology*. 121(6):1184-93 (2014).
- Barrett Rabinow, Jane Werling, Alison Bendele, Jerome Gass, Roy Bogseth, Kelly Balla, Paul Valaitis, Audrey Hutchcraft, Sabine Graham. Intra-Articular (IA) Ropivacaine Microparticle Suspensions Reduce Pain, Inflammation, Cytokine and Substance P Levels Significantly More than Oral or IA Celecoxib in a Rat Model of Arthritis. Inflammation. Volume 38, Issue 1 (2015), Pages 40-60.
- Dennis Jenke, Barrett E. Rabinow, Molly Chacko. Potential Contribution of a Plasticized PVC Packaging Material to the Level of Elemental Impurities in Packaged Drug Products. *Pharmaceutical Outsourcing*, v.16, Issue 2 (2015).
- Dennis Jenke and Barrett Rabinow. Proper accounting for surface area to solution volume ratios in exaggerated extractions. *PDA J Pharm Sci and Tech* 71: 225-233 (2017).

PAPERS PRESENTED AT PROFESSIONAL MEETINGS

- B. E. Rabinow and S. Natelson. Screening with Erythrocytes for Genetic Enzyme Deficiencies of Glucose and Galactose Metabolism. presented at the 172nd National Meeting of the American Chemical Society, San Francisco, CA, 1976.
- G. L. Closs and B. E. Rabinow. A Kinetic Study of Diphenylmethylen Reactions. presented at the 172nd National Meeting of the American Chemical Society, San Francisco, CA, 1976.
- B. E. Rabinow, L. E. Webb, and S. Natelson. Total Blood CO₂ and CO Estimation by Infrared Spectrometry. presented at the 28th National Meeting of the American Association for Clinical Chemistry, Houston, TX, 1976.
- B. E. Rabinow. Contribution of the Concentrate to Contaminant Levels in the Dialysate. presented at the Association for Advancement of Medical Instrumentation Technology Assessment Conference: Issues in Hemodialysis, Washington, D.C., 1980.
- B. E. Rabinow. Comparison of ICP, GFAA, and PZAA Trace Metal Methods in the Health Care Field. Society for Applied Spectroscopy, February 1982, Chicago meeting.
- B. E. Rabinow. Theory and Applications of Polarized Zeeman Atomic Absorption Spectroscopy. LABCON Analytical Symposium, September 1982, Chicago, IL.
- B. E. Rabinow, et al. Aluminum Analysis in Hemodialysis Fluid. Labcon Central '83, September 1983, Chicago, IL.
- B. E. Rabinow, et al. Quantitation of Acetate and Bisulfite in Pharmaceutical Formulations by High Performance Liquid Chromatography. Labcon Central '83, September 1983, Chicago, IL.
- B. E. Rabinow, et al. An Automated HPLC Method for Measuring Micro Levels of Diethylhexylphthalate in Solution. 1983 FACSS Meeting, September 1983, Philadelphia, PA.
- B. E. Rabinow, et al. Liquid Chromatographic Determination of Phosphatidyl Choline (PC) and Phosphatidylethanolamine (PE) and Egg Phosphatide. Labcon Central '84, September 1984, Chicago. IL.

PAPERS PRESENTED AT PROFESSIONAL MEETINGS (Continued)

- B. E. Rabinow. Management of Aluminum in Parenteral Products. Parenteral Drug Association, October 1988, Chicago, IL.
- B. E. Rabinow. Development of Protein Compatible Intravenous Drug Containers. Dept. of Chemical Engineering, U. of Washington, March 1992, Seattle, WA.
- B. E. Rabinow. Prediction of Extractable Levels from Intravenous Containers. American Association of Pharmaceutical Scientists, April 1993, Arlington, VA.
- B. E. Rabinow. Plastic Containers and Closures for Intravenous Solutions. FDA Chicago District Drug Team Workshop on Containers / Closures and Particulate Matter in Sterile Liquids, September 12, 1996, Arlington Heights, IL.
- B. E. Rabinow. Nanosuspension Dosage Forms: Formulation and Biological Behavior. R & D Drug Delivery Partnerships Conference, Los Angeles, CA, January 2002.
- R. White, J. Wong, T. Barber, J. Glosson, J. Kerzee, N. Goud, J. Cammack, B. Rabinow. Preclinical Evaluation of Itraconazole Nanosuspension for Intravenous Injection. poster presentation at Society of Toxicology, 41st Annual Meeting, The Toxicologist 72: 51 (abstract #244), March 2003.
- B. Rabinow, M. Chaubal, J. Wong, T. Barber, and P. Papadopoulos. Critical Manufacturing Quality Parameters for NANOEDGE Injectable Nanosuspensions. Poster Presentation (Abstract #T3213) at the American Association of Pharmaceutical Scientists (AAPS) - 2003 Annual Meeting and Exposition, Salt Lake City, UT, October 26-30, 2003.
- B. E. Rabinow, R. D. White, J. Glosson, C.-S. Sun, P. Papadopoulos. Enhanced Efficacy of NANOEDGE Itraconazole Nanosuspension in an Immunosuppressed Rat Model Infected with an Itraconazole-Resistant *C. albicans* Strain. Poster Presentation (Abstract #R6184) at the American Association of Pharmaceutical Scientists (AAPS) – 2003 Annual Meeting and Exposition, Salt Lake City, UT, October 26-30, 2003.
- B. Rabinow, J. Wong, P. Papadopoulos, M. Doty, M. Chaubal, J. Konkell, C. Rebbeck, and P. Gupta. Versatile Pharmacokinetic Profiles Enabled By Nanoedge Nanosuspension Formulation Platform For Water Insoluble Drugs. Plenary Lecture presented at the 7th US-Japan Symposium on Drug Delivery Systems, Lahaina, Maui, HI, December 14-19, 2003.
- Limoges J, Kadiu I, Morin D, Chaubal M, Werling J, Rabinow B, Gendelman HE. Sustained antiretroviral activity of indinavir nanosuspensions in primary monocyte-derived macrophages. Abstract No. 468, 11th Conf. Retroviruses and Opportunistic Infections, San Francisco CA Feb 8-11, 2004.
- B. Rabinow, P. Gupta, J. Wong, P. Papadopoulos, and M. Chaubal. Formulation of Water-Insoluble Antineoplastic Agents as Nanosuspensions using NANOEDGE Formulation Technology. (abstract #632) poster presentation at the American Association for Cancer Research Meeting (AACR), March 27-31, 2004, Orlando, FL.
- B. Rabinow, J. Wong, M. Doty, M. Chaubal, J. Kipp, J. Wong, P. Papadopoulos, K. Kerzee. Formulation of Poorly Water Soluble Drugs, Optimized for Pre-Clinical Testing. poster presentation at the Society of Toxicology 42nd Annual Meeting, March 9-13, 2004, Salt Lake City, UT.
- B. Rabinow, J. Wong, P. Papadopoulos, M. Doty, M. Chaubal, J. Konkell, C. Rebbeck, and P. Gupta. Nanoedge nanosuspension formulation platform for water insoluble drugs – pharmacokinetics. European Conference on Drug Delivery and Pharmaceutical Technology, Seville, Spain, May 10-12, 2004.
- B. Rabinow. Nanotechnology, Delivery and Pharmacokinetics of Water-Insoluble Drugs. 2004 AAPS Pharmaceutics and Drug Delivery Conference, June 7, 2004, Philadelphia, PA.
- B. Rabinow, H. Dou, M. Chaubal, J. Limoges, J. Werling, J. Kipp, I. Kadiu, D. Morin, H. Gendelman. NANOEDGE Indinavir suspensions for increased CNS delivery through macrophage targeting. Poster presentation at the Controlled Release Society Meeting, Honolulu, HI, June 12-16, 2004.
- B. Rabinow. Nanosuspensions: Expediting lead optimization for insoluble compounds. 9th Annual Drug Delivery Partnerships. San Diego, CA, January 24-26, 2005.
- B. Rabinow. Pharmacokinetics of Nanosuspensions. Barnett Conference on Nanotechnology for Drug Delivery, Philadelphia, PA, March 21, 2005.
- B. Rabinow, G. Raab, B. Roessler, P. Papadopoulos. Mechanism of enhanced IV bioavailability: comparison of whole blood vs. plasma concentration of NANOEDGE nanosuspension formulation of the water insoluble anti-neoplastic IFT-156 in the Cynomolgus monkey. Poster LB-252, Amer. Assn for Cancer Research. National Meeting. April 19, 2005, Anaheim, CA.
- B. Rabinow. Characterization of Drug Nanosuspensions. Workshop on Characterization of Nanomaterials for Medical and Health Applications (jointly sponsored with ASTM, NCI, NIST, and FDA) May 19, 2005, Reno, NV.

PAPERS PRESENTED AT PROFESSIONAL MEETINGS (Continued)

- B. Rabinow, G. Raab, B. Roessler, P. Papadopoulos. Nanosuspension formulation and optimized pharmacokinetics of anti-neoplastic IFT-156. Abstract No. 270, 32nd Annual Meeting of Controlled Release Society, June 18-22, 2005, Miami Beach, FL.
- B. Rabinow. Delivery Strategies of Nanosuspensions for Targeted Therapy. 6th Annual Targeted Delivery of Nanoparticles for Therapeutics and Molecular Imaging. Washington D.C., August 22-23, 2005.
- B. Rabinow. Nanosuspensions in Drug Delivery. Twelfth Annual Glaucoma Foundation-Integrating Nanotechnology and Drug Delivery for Neuroprotection, New York, NY, September 16, 2005.
- B. Rabinow, J. Glosson, C-S Sun, P. Papadopoulos, J. Kipp, J. Wong. Nanosuspension formulation of itraconazole increases survival relative to solution formulation in immunocompromised rat model of itraconazole-resistant *C. albicans*. Poster M-1007, 45th Annual Meeting of ICAAC, September 2005.
- B. Rabinow. Injectable Nanosuspension Dosage Forms. Japan Soc Pharma Machinery & Engr 15th Commemorative Conference, Tokyo, Oct 13, 2005.
- B. Rabinow, G. Raab, B. Roessler, P. Papadopoulos. Pharmacokinetics of Anti-neoplastic IFT-156 Nanosuspension in Dogs. Poster # R6118. 2005 AAPS Annual Meeting and Exposition, November 6-10, 2005, Nashville, TN.
- B. Rabinow. Cellular Targeting with Therapeutic Drug Nanosuspensions. Applications of Nanobiology to Biodefense: Diagnostics, Detection, Therapeutics and Biodefense Immunology, Nov 17, 18, 2005 Rockville, MD.
- B. Rabinow, H. Dou, C. Destache, J. Kingsley, R. Mosley, J. Nelson, J. Morehead, L. Poluektova, M. Boska, S. Gorantla, M. Chaubal, J. Werling, J. Kipp, H. Gendelman. A novel platform for anti-retroviral delivery: implications for HIV-1 associated dementia. Poster presented at Society for Neuroscience, 35th Ann Meeting, November 12-16, 2005, Washington, DC.
- B. Rabinow, G. Raab, B. Roessler, P. Papadopoulos. Characterization of Efficacy, Distribution, and PK of Nanosuspension Formulation of Anti-Neoplastic IFT-156 in the Rat, Dog, and Monkey. 5th World Meeting on Pharmaceuticals, Biopharmaceutics and Pharmaceutical Technology, Geneva, Switzerland, March 30, 2006.
- H. Dou, C. Destache, J. Morehead, R. Mosley, M. Boska, J. Kingsley, B. Rabinow, H. Gendelman. A macrophage nanoparticle system for anti-retroviral drug. SNIP 12th Ann. Scientific Conf, Santa Fe, NM, Poster #TP-7 April 6, 2006.
- H. Dou, C. Destache, J. Kingsley, J. Morehead, M. Chaubal, B. Rabinow, H. Gendelman. Macrophage-based antiretroviral delivery for HIV-1 associated dementia. SNIP 12th Ann. Scientific Conf, Santa Fe, NM, Poster #TP-8 April 6, 2006.
- B. Rabinow, Investigating the Applications of Nanoparticles for Targeted Therapy. Nanotechnology in Pharmaceuticals and Biotech. Amsterdam, The Netherlands, April 24, 2006.
- B. Rabinow. Commercializing Nanotechnology and Alliance Management. Workshop, Nanotechnology in Pharmaceuticals and Biotech. Amsterdam, The Netherlands, April 24, 2006.
- B. Rabinow. Special Forum: Health and Safety Issues of Nanomaterials, Sixth World Congress Nanocomposites 2006, Chicago, IL June 19, 2006.
- B. Rabinow. Drug Targeting with Nanosuspensions. North Carolina Pharmaceutical Discussion Group, Research Triangle Park, NC, September 14, 2006.
- B. Rabinow. Targeting with Drug Nanosuspensions. 2006 International Conference on Bio and Pharmaceutical Science and Technology, San Diego, CA, December 20, 2006.
- B. Rabinow. Drug Targeting with Nanosuspensions. Nanotechinsight, Luxor, Egypt, March 16, 2007.
- B. Rabinow. Macrophage-Targeting HIV Sanctuaries in the Mouse with Drug Nanosuspensions, Abstract 609, 2007 AAPS Annual Meeting and Exposition, November 11-15, 2007, San Diego, CA.
- B. Rabinow. Nanoparticles: Impact on PK and Distribution. AAPS Annual Arden Conference, February 3, 2009, West Point, NY.
- B. Rabinow. Targeting Applications of Nanocrystals in Drug Delivery. AAPS Annual Meeting and Exposition, November 17, 2010, New Orleans, LA.
- B. Rabinow. Preclinical assessment of IV nanosuspensions designed for treatment of HIV. Land O Lakes Conference, June 11, 2014, Madison, WI.
- B. Rabinow. Understanding and Implementing the New ICH/USP Elemental Impurity Guidelines and Quality by Design. Compliance Online Symposium. March 30-31, 2017, San Francisco, CA.
- B. Rabinow. Prevention of SARS-CoV-2 Infection by Linoleic Acid. U. Nebraska Med Ctr., Dept Pharmacology & Exptl Neuroscience Seminar Series. October 30, 2020.