

CURRICULUM VITAE

ROBERT PARKS SHREWSBURY

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Registered Pharmacist: North Carolina

EDUCATION

University of Kentucky, College of Pharmacy, 1973-1977
Doctor of Philosophy in Pharmaceutical Sciences, Biopharmaceutics and Pharmacokinetics Emphasis, 1977.

University of Oklahoma, College of Pharmacy, 1967-1972
Bachelor of Science in Pharmacy, 1972.

PROFESSIONAL EXPERIENCE

Associate Professor, Division of Practice Advancement and Clinical Education
UNC Eshelman School of Pharmacy, University of North Carolina at Chapel Hill, 2007-present.

Associate Professor, Division of Drug Delivery and Disposition
School of Pharmacy, University of North Carolina at Chapel Hill, 1987-2007.

Director of Information Technology
University of North Carolina at Chapel Hill School of Pharmacy, 2001-2004.

Assistant Professor, Division of Pharmaceutics
School of Pharmacy, University of North Carolina at Chapel Hill, 1980-1987.

Assistant Professor of Biopharmaceutics
St. Louis College of Pharmacy, 1977-1980.

OTHER PROFESSIONAL EXPERIENCE

Member and Vice Chair, United States Pharmacopeia Expert Committee on Compounding, 2010-2025, 2020-2025.

Journal Reviewer:
American Journal of Pharmaceutical Education, 2013-2015, 2018-2020.
Currents in Pharmacy Teaching and Learning, 2016-2021.
Journal of Pharmacy and Pharmacology, 1991-1993, 2011, 2014-2016.
International Journal of Pharmaceutical Compounding, 2000-2016.
North Carolina Medical Journal, 2013.
Journal of Pharmaceutical Sciences, 1994-2000.
Life Sciences (Pharmacology Letters), 1993-1994.
Biochemical Pharmacology, 1990-1993.

Visiting Pharmacy Faculty, Janssen Pharmaceutical Company
Pharmaceutical Manufacturers Association Coordinated Industry Program, August 1989.

UNIVERSITY AND SCHOOL OF PHARMACY HONORS

Instructor "Worthy of Recognition" earned for PHCY 515, Spring 2021.
Instructor "Worthy of Recognition" earned for PHCY 513, Fall 2020.
Instructor "Worthy of Recognition" earned for PHCY 810, Spring 2020.
Instructor "Worthy of Recognition" earned for PHCY 515, Spring 2020.
Instructor "Worthy of Recognition" earned for PHCY 513, Fall 2019.
Instructor "Worthy of Recognition" earned for PHCY 810, Spring 2017.
Instructor "Worthy of Recognition" earned for PHCY 405 and PHCY 513, Fall 2016.
PY2 Instructor of the Year earned from UNC-CH Class of 2018, Spring 2016.
Instructor "Worthy of Recognition" earned for PHCY 404, Spring 2016.
Instructor "Worthy of Recognition" earned for PHCY 405, Fall 2015.
Overall Instructor of the Year earned from UNC-CH Class of 2014.
Professor of the Year earned from ECSU Class of 2014.
Instructor "Worthy of Recognition" earned for PHCY 402 and 404, Spring 2013, Spring 2014, Spring 2015.
Instructor "Worthy of Recognition" earned for PHCY 401, 402, 403, 404, and 405, 2012.
Hollingsworth Faculty Scholar, University of North Carolina at Chapel Hill School of Pharmacy, 1999-2002.
Outstanding Teacher Performance Award, 3/5 Class, School of Pharmacy, 1994-1995.
Tanner Award Nominee, University of North Carolina at Chapel Hill, April 1993.
Best Professor Award, 3/5 Class, School of Pharmacy, April 1993.
Best Instructor Award, Senior Class, School of Pharmacy, April 1993.

BIBLIOGRAPHY

BOOKS:

13. Shrewsbury R.P. (contributing author, 6 chapters): The Pharmacy Technician, 7th Edition, Morton Publishing Co., Englewood, Colorado, 2020 (18 chapters, 688 pages). A continuing title in the American Pharmacists Association's Basic Pharmacy and Pharmacology Series. Also has an associated text, Workbook & Certification Review, 7th Edition, Englewood, Colorado, 2020 (300 pages). Also available online <https://app.tophat.com/e/519322>.
12. Shrewsbury R.P.: Applied Pharmaceutics in Contemporary Compounding. 4th edition, Morton Publishing Co., Englewood, Colorado, 2020 (40 chapters, 610 pages).
11. Shrewsbury R.P. (contributing author, 6 chapters): The Pharmacy Technician, 6th Edition, Morton Publishing Co., Englewood, Colorado, 2016 (18 chapters, 700 pages). A continuing title in the American Pharmacists Association's Basic Pharmacy and Pharmacology Series. Also has an associated text, Workbook & Certification Review, 6th Edition, Englewood, Colorado, 2016 (294 pages).
10. Shrewsbury R.P.: Applied Pharmaceutics in Contemporary Compounding, 3rd Edition, Morton Publishing Co., Englewood, Colorado, 2015 (32 chapters, 475 pages).
9. Shrewsbury R.P. (contributing author, 6 chapters, 35% of text): The Pharmacy Technician, 5th Edition, Morton Publishing Co., Englewood, Colorado, 2013 (594 pages). A continuing title in the American Pharmacists Association's Basic Pharmacy and Pharmacology Series. Also has an associated text, Workbook & Certification Review, 5th Edition, Englewood, Colorado, 2013 (278 pages).
8. Shrewsbury R.P. (contributing author, 6 chapters, 45% of text): The Pharmacy Technician, 4th Edition, Morton Publishing Co., Englewood, Colorado, 2010 (532 pages). A continuing title in the American Pharmacists Association's Basic Pharmacy and Pharmacology Series. Also has an associated text, Workbook & Certification Review, 4th Edition, Englewood, Colorado, 2010 (246 pages).
7. Shrewsbury R.P.: Applied Pharmaceutics in Contemporary Compounding, 2nd Edition, Morton Publishing Co., Englewood, Colorado, 2008 (30 chapters, 288 pages).

6. Shrewsbury R.P. (contributing author, 6 chapters, 40% of text): The Pharmacy Technician, 3rd Edition, Morton Publishing Co., Englewood, Colorado, 2007 (455 pages). A continuing title in the American Pharmacists Association's Basic Pharmacy and Pharmacology Series. Also has an associated text, Workbook & Certification Review, 3rd Edition, Englewood, Colorado, 2007 (232 pages).

5. Shrewsbury R.P. (contributing author, 6 chapters, 40% of text): The Pharmacy Technician, 2nd Edition, Morton Publishing Co., Englewood, Colorado, 2004 (424 pages). A continuing title in the American Pharmacists Association's Basic Pharmacy and Pharmacology Series. Also has an associated text, Workbook & Certification Review, 2nd Edition, Englewood, Colorado, 2004 (232 pages).

4. Shrewsbury R.P.: Applied Pharmaceutics in Contemporary Compounding, 1st Edition, Morton Publishing Co., Englewood, Colorado, 2001 (19 chapters, 200 pages).

3. Shrewsbury R.P. (contributing author, 5 chapters, 35% of text): Basic Pharmacology, Morton Publishing Co., Englewood, Colorado, 2000 (450 pages). A continuing title in the American Pharmaceutical Association's Basic Pharmacy and Pharmacology Series.

2. Shrewsbury R.P. (contributing author, 7 chapters, 52% of text): The Pharmacy Technician, 1st Edition, Morton Publishing Co., Englewood, Colorado, 1999 (376 pages). A title in the American Pharmaceutical Association's Basic Pharmacy and Pharmacology Series. Also has an associated text, Workbook & Certification Review, Morton Publishing Co., Englewood, Colorado, 1999 (151 pages).

1. Shinn A.F., Shrewsbury R.P.: Evaluations of Drug Interactions, 3rd edition. C.V. Mosby Co., St. Louis, Missouri, 1985 (783 pages). A title of the American Pharmaceutical Association.

BOOK CHAPTERS:

2. Jih J.S., Shrewsbury R.P.: Pharmacist Education. Compounding Sterile Preparations, 5th edition, Forrey R.A., Amerine L.B., Yaniv A.W. ed., American Society of Health-System Pharmacists, Bethesda MD, 2021, submitted for publication.

1. Shrewsbury R.P.: Pharmaceutical and Medicinal Monographs for Diuretic Drugs. Remington: The Science and Practice of Pharmacy, 22nd edition. Pharmaceutical Press, London, 2012.

REFEREED JOURNAL ARTICLES:

69. Mislan S.K., Wright E.M., Shrewsbury R.P.: "Practice Makes Perfect" Strategy of Teaching Aseptic Technique Improved Observational Scores but Not Preparation Potency. *Currents in Pharmacy Teaching and Learning*. 13:1584-1592 (2021).

68. Darst E., Makhoul T., Brannick E., Mitchell T., Shrewsbury R.: A Student-Led Elective Compounding Course to Provide Quality Improvement Feedback for a Required Compounding Course. *American Journal of Pharmaceutical Education* 84(8): Article 7394 (2020).

67. Lee R.K., Shrewsbury R.P.: Comparison of observational evaluations and potency analyses to assess aseptic techniques of student compounders. *American Journal of Pharmaceutical Education* 83(9): Article 7338 (2019).

66. Darst E.C., Shrewsbury R.P.: The Impact of the Pharmacist's Intervention on Patient Education and Dosing of Suspensions. *American Journal of Pharmaceutical Education* 83(5): Article 6781 (2019).

65. Jih J.S., Shrewsbury R.P.: Student Self-Analysis of Their Nonsterile Preparations and its Effect on Compounding Confidence *American Journal of Pharmaceutical Education* 82(10): Article 6473 (2018).

64. Yoo K.Y., Shrewsbury R.P.: Effect of Course Structure on the Accuracy of Nonsterile Compounded Preparations. *American Journal of Pharmaceutical Education* 82(9): Article 6463 (2018).

63. Park H.L., Shrewsbury R.P.: Student Evaluation of Online Pharmaceutical Compounding Videos. *American Journal of Pharmaceutical Education* 80(2): Article 30 (2016).

62. Roark A., Anksorus H., Shrewsbury R.: Long-Term Results of an Analytical Assessment of Student Compounded Preparations. *American Journal of Pharmaceutical Education* 78(9): Article 164 (2014).
61. Alford E., Shrewsbury R.: Impact of Required Versus Optional Remake of a Preparation on Pharmacy Students' Compounding Accuracy. *American Journal of Pharmaceutical Education* 77(4): Article 73 (2013).
60. Shrewsbury R., Augustine S., Birnie C., Nagel K., Ray D., Ruble J., Scolaro K., Athay Adams J.: Assessment and Recommendations of Compounding Education in AACP Member Institutions. *American Journal of Pharmaceutical Education* 76(7): Article S9 (2012).
59. Robertson J.L., Shrewsbury R.P.: Video Teleconferencing in the Compounding Laboratory Component of a Dual-Campus Doctor of Pharmacy Program. *American Journal of Pharmaceutical Education* 75(9): Article 181 (2011).
58. Shrewsbury R.P.: A Hybrid CD-Internet Delivery System for Pharmaceutical Care Laboratory Instruction. North American Web 2000 International Meeting, <http://naweb.unb.ca/2k/posters/Shrewsbury1.html> (2000).
57. Hadzija B.W., Shrewsbury R.P.: Stability of Four Commercial Products Delivered by Mail Order. *International Journal of Pharmaceutical Compounding* 3:59-63 (1999).
56. Shrewsbury R.P., Deloatch K.H.: Accuracy in Prescriptions Compounded by Pharmacy Students. *International Journal of Pharmaceutical Compounding* 2:139-142 (1998).
55. Shrewsbury R.P., Johnson L.W., Oliver S.R.: Influence of Moderate Hemodilution with Fluosol or Normal Saline on Carbaryl Disposition in Sprague-Dawley Rats. *Journal of Pharmacy and Pharmacology* 49:236-240 (1997).
54. Wright L.N., Thorp Jr. J.M., Kuller J.A., Shrewsbury R.P., Ananth C., Hartmann K.: Transdermal Nicotine Replacement in Pregnancy: Maternal Pharmacokinetics and Fetal Effects. *American Journal of Obstetrics and Gynecology* 176:1090-1094 (1997).
53. Hadzija B.W., Shrewsbury R.P.: Atropine Overdose with a Suppository Formulation Containing Atropine Sulfate. *International Journal of Pharmaceutical Compounding* 1:271-273 (1997).
52. Hall M.E., Shrewsbury R.P., Chen S.Y., Elkins A.L., Burnham B.S., Spielvogel B.F., Hall I.H.: The Disposition and Tissue Distribution of Trimethylamine-(¹⁴C)-Carboxyborane and Trimethylamine-(¹⁴C)-Carboxymethoxyborane in CF₁ Mice. *Pharmaceutical Sciences* 3:473-478 (1997).
51. Murphy M.E., Elkins A.L., Shrewsbury R.P., Sood A., Spielvogel B.F., Hall I.H.: The Effects of Amine-Carboxyborane Related Derivatives on UMR-106 Bone Metabolism. *Metal-Based Drugs* 3:31-47 (1996).
50. Hadzija B.W., Shrewsbury R.P.: Determination of Hydrocodone in Tussionex[®] Extended-Release Suspension by High-Performance Liquid Chromatography (HPLC). *Journal of Forensic Sciences* 41:878-880 (1996).
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47. Miller III M.C., Shrewsbury R.P., Elkins A.L., Sood A., Spielvogel B.F., Hall I.H.: The Disposition, Tissue Distribution, and Cellular Transport of N-[[[(Trimethylamino)boryl]carbonyl]-L-Phenylalanine Methyl Ester in CF₁ Mice. *Journal of Pharmaceutical Sciences* 84:933-936 (1995).
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45. Shrewsbury R.P., Wyrick S.D., Elkins A.L., Izydore R.A., Chen S.Y., Miller III M.C., Burnham B.S., Hall I.H.: Disposition of the Pharmacologically Active Compound [1-¹⁴C-Acetyl]-1-Acetyl-4-Phenyl-1,2,4-Triazolidine-3,5-Dione in CF₁ Mice. *Drug Investigation* 7:275-281 (1994).
44. Shrewsbury R.P., Oliver S.R., White L.G.: The Effect of Moderate Hemodilution with Fluosol on Cytochrome P4502D6 Activity in the Rat. *Artificial Cells, Blood Substitutes, and Immobilization Biotechnology* 22:1237-1242 (1994).
43. Collier A.M., Goldstein G.M., Shrewsbury R.P., Davis S.M., Koch G.G., Zhang C.A., Benowitz N.L., Lewtas J., Williams R.W.: Cotinine Elimination and Its Use as a Biomarker in Young Children Involuntarily Exposed to Environmental Tobacco Smoke. *Indoor Environment* 3:353-359 (1994).
42. Burnham B.S., Hall I.H., Shrewsbury R.P., Hall E.S., Sood A., Spielvogel B.F.: Disposition and Distribution of the Cytidine Cyanoborane Adduct, [2-¹⁴C]-2'-Deoxycytidine-³N-cyanoborane in CF₁ Mice. *Drug Investigation* 6:75-82 (1993).
41. Collier A.M., Goldstein G.M., Shrewsbury R.P., Davis S.M., Koch G.G., Zhang C.A., Benowitz N.L., Lewtas J., Williams R.W.: Cotinine Elimination Following ETS Exposure in Young Children as a Function of Age, Sex, and Race. *Proceedings of the Sixth International Conference on Indoor Air Quality and Climate* 1:669-674 (1993).
40. Hadzija B.W., Shrewsbury R.P.: Participation of Graduate Students in the Undergraduate Instruction of Pharmaceutics. *Journal of Pharmacy Teaching* 4:11-19 (1993).
39. Shrewsbury R.P., Hong D.D., White L.G., Gordon T.R.: The Effect of Moderate Hemodilution with Fluosol-DA or Hespan on the Nonmicrosomal Acetylation of Sulfamethazine in the Rat. *Journal of Pharmacy and Pharmacology* 44:84-88 (1992).
38. Shrewsbury R.P.: Acute Effects of Moderate Fluosol-DA Hemodilution on Hepatic Microsomal and Nonmicrosomal Metabolism in Rats. *Biomaterials, Artificial Cells, and Immobilization Biotechnology* 20:1037-1043 (1992).
37. Hall I.H., Wong O.T., Sood A., Sood C.K., Spielvogel B.F., Shrewsbury R.P., Morse K.W.: Hypolipidemic Activity in Rodents of Boron Analogs of Phosphonoacetates and Cyanoborane Adducts of Dialkyl Aminomethylphosphonates. *Pharmacological Research* 25:259-270 (1992).
36. Hall I.H., Wong O.T., Wyrick S.D., Simlot R., Shrewsbury R.P.: Disposition of the Hypolipidemic Agent, 6-Amino-2-mercapto-5-methylpyrimidine-4-carboxylic acid, in Sprague Dawley Rats. *Journal of Pharmacy and Pharmacology* 43:360-363 (1991).
35. Shrewsbury R.P.: Plasma Volumes, Blood Volumes, and Plasma Protein Concentrations After Moderate Hemodilution with Fluosol-DA or Normal Saline in the Rat. *Journal of Pharmacy and Pharmacology* 43:371-374 (1991).
34. Grippo A.A., Wyrick S.D., Lee K.H., Shrewsbury R.P., Hall I.H.: Disposition of an Antineoplastic Sesquiterpene Lactone, ³H-Plenolin, in BDF₁ Mice. *Planta Medica* 57:309-314 (1991).
33. Shrewsbury R.P., White L.G.: The Effect of Moderate Hemodilution with Fluosol-DA or Normal Saline on Acetaminophen Metabolism in the Rat. *Experientia* 46:213-217 (1990).
32. Shrewsbury R.P., White L.G.: Evaluation of Cytochrome P-450 Mediated Metabolism of Antipyrine in the Rat at Different Extents of Fluosol-DA Hemodilution. *Research Communications in Chemical Pathology and Pharmacology* 67:411-414 (1990).
31. Collier A.M., Goldstein G.M., Shrewsbury R.P., Zhang C.A., Williams R.W.: Urine Cotinine Elimination Half-life in Young Children Exposed to Side-stream Cigarette Smoke. *Proceedings of the Fifth International Conference on Indoor Air Quality and Climate, Vol. 2, 1990, pp. 195-200.*

30. Shrewsbury R.P., White L.G.: The In Situ Absorption of Antipyrine as a Measure of Intestinal Blood Flow in Fluosol-DA Hemodiluted Rats. *Journal of Pharmacy and Pharmacology* 42:511-512 (1990).
29. Shrewsbury R.P., Hong D.D.: The Effect of Fluosol-DA and Hespan Hemodilution on S-Warfarin Elimination in the Rat. *Journal of Pharmacy and Pharmacology* 42:665-666 (1990).
28. Shrewsbury R.P., White L.G.: Effect of the Method of Fluosol-DA Administration on Antipyrine Disposition in the Rat. *Journal of Pharmacy and Pharmacology* 42:813-816 (1990).
27. Shrewsbury R.P., White L.G.: Failure to Detect Heparin in Plasma Containing Fluosol-DA Using an Analytical Kit. *Clinica Chimica Acta* 179:347-348 (1989).
26. Oswald C.B., Wyrick S.D., Chaney S.G., Shrewsbury R.P., Hall I.H.: Disposition of Cisplatin Derivatives ³H-Cis-1,2-Diaminocyclohexanedichloro-platinum (II) and ³H-Cis-1,2-Diaminocyclohexanemalonato-platinum (II) in BDF₁ Mice. *Research Communications in Chemical Pathology and Pharmacology* 64:41-58 (1989).
25. Shrewsbury R.P., Oliver S.R., Anderson W.T., Lewis L.M., White L.G.: The Effect of Varying Percentages of Fluosol-DA Hemodilution on Antipyrine Metabolism in the Rat. in: Hanker J.S., Giammara B.L. (editors) Biomedical Materials and Devices, Materials Research Society Symposium Proceedings, Vol. 110, Materials Research Society, Pittsburgh, PA., 1989, pp. 147-151.
24. Hall I.H., Oswald C.B., Wyrick S.D., Maguire J.H., Shrewsbury R.P.: Disposition of the Hypolipidemic Agent, ¹⁴C-2,3-Dihydrophthalazine-1,4-dione, in Sprague Dawley Rats. *Journal of Pharmacy and Pharmacology* 41:394-397 (1989).
23. Shrewsbury R.P., White L.G.: The Effect of Moderate Fluosol-DA Hemodilution on Gender Specific Metabolism of Antipyrine. *Research Communications in Chemical Pathology and Pharmacology* 64:455-462 (1989).
22. Shrewsbury R.P., Oliver S.R., Lewis L.M., Anderson W.T., White L.G.: The Effect of Varying Extents of Fluosol-DA or Normal Saline Hemodilution on the Dose Dependent Kinetics of Phenytoin in the Rat. *Journal of Pharmacy and Pharmacology* 41:582-584 (1989).
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20. Shrewsbury R.P., White L.G.: Some Insights into the Variations in Antipyrine Pharmacokinetics in the Rat. *Research Communications in Chemical Pathology and Pharmacology* 62:137-140 (1988).
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17. Hall I.H., Reynolds D.J., Wyrick S.D., Maguire J.H., Shrewsbury R.P.: The Disposition of the Hypolipidemic Agent, ¹⁴C-o-(N-phthalimido)acetophenone, in Sprague Dawley Rats. *Drug Disposition and Metabolism* 16:196-200 (1988).
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13. Merritt J.C., Shrewsbury R.P., Locklear F., Demby K.B., Wittle G.L.: Effects of Δ^9 -Tetrahydrocannabinol and Vehicle Constituents on Intraocular Pressure in Normotensive Dogs. *Research Communications in Substances of Abuse* 7:29-35 (1986).
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11. Shrewsbury R.P.: Effect of Moderate Hemodilution with Fluosol-DA or Normal Saline on Ampicillin Kinetics. *Journal of Pharmacy and Pharmacology* 38:647-652 (1986).
10. Shrewsbury R.P., Swarbrick J., Newton K.S., Riggs L.C.: Influence of Ophthalmic Formulations on Sodium Cromoglycate Disposition in the Albino Rabbit Eye. *Journal of Pharmacy and Pharmacology* 37:614-617 (1985).
9. Gural R.P., Chungi V.S., Shrewsbury R.P., Dittert L.W.: Dose Dependent Absorption of Disodium Etidronate. *Journal of Pharmacy and Pharmacology* 37:443-445 (1985).
8. Shrewsbury R.P., Wurster D.E., Dittert L.W.: Dose Dependent Effect of Calcium and Magnesium Etidronate on Salicylic Acid Absorption in the Rat. *Journal of Pharmacy and Pharmacology* 37:440-442 (1985).
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4. Wurster D.E., Shrewsbury R.P.: Simulation Package for Multiple Intravenous Infusions of Two Compartment Pharmacokinetic Drugs. *International Journal of Bio-Medical Computing* 12:455-470 (1981).
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2. Shrewsbury R.P., Foster T.S., Dittert L.W., Quigley J.W., Leavell U.M.: Percutaneous Absorption of Hydroxyurea Through Psoriatic Lesions. *Current Therapeutic Research* 28:1002-1011 (1980).
1. Foster T.S., Shrewsbury R.P., Coonrod J.D.: Bioavailability and Pain Study of Cefamandole Nafate. *Journal of Clinical Pharmacology* 20:526-533 (1980).

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45. Kreiser M., Shrewsbury R.: HPLC Method Superior to Spectrophotometric Method in Determining Ketoprofen Variation in Student Compounded PLO Emulsion Preparations. Abstracts of the 122nd Annual Meeting of the American Association of Colleges of Pharmacy, (2021). Honorable Mention.
44. Newman J.N., Wang Y., Shrewsbury R.P.: Effectiveness of an Integrated Curriculum On Grades in a Nonsterile Compounding Course. Abstracts of the 121th Annual Meeting of the American Association of Colleges of Pharmacy, (2020). *American Journal of Pharmaceutical Education* 84 (6) Article 8220; DOI: <https://doi.org/10.5688/ajpe8220>.

43. Mislán S.K., Shrewsbury R.P.: Analysis of Compounded Preparations to Evaluate a “Practice Makes Perfect” Aseptic Technique Teaching Method. Abstracts of the 120th Annual Meeting of the American Association of Colleges of Pharmacy, Chicago, Illinois (2019). *American Journal of Pharmaceutical Education* 83(5): Article 7654 (2019).
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40. Lee R., Shrewsbury R.: Multiple Potency Determination as an Additional Assessment Tool of Aseptic Compounding Technique. Abstracts of the 118th Annual Meeting of the American Association of Colleges of Pharmacy, Nashville, Tennessee (2017). *American Journal of Pharmaceutical Education* 81(5): Article S5 (2017).
39. Yoo K.Y., Shrewsbury R.: Effect of Course Structure on the Accuracy of Nonsterile Compounded Preparations. Abstracts of the 118th Annual Meeting of the American Association of Colleges of Pharmacy, Nashville, Tennessee (2017). *American Journal of Pharmaceutical Education* 81(5): Article S5 (2017).
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37. Dinkins L., Shrewsbury R.: Duplicating a Well-Controlled Stability Research Study in a Teaching Compounding Laboratory. Abstracts of the 115th Annual Meeting of the American Association of Colleges of Pharmacy, Dallas, Texas (2014). *American Journal of Pharmaceutical Education* 78(5): Article 111 (2014).
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34. Shrewsbury R.: Using an Analysis Requirement for Assigning Compounded Product Grades: Required or Optional Re-Makes? Abstracts of the 112th Annual Meeting of the American Association of Colleges of Pharmacy, San Antonio, Texas (2011). *American Journal of Pharmaceutical Education* 75:5 (2011).
33. Shrewsbury R.: Compounding in Schools of Pharmacy: A Report of the AACP COS Task Force on Compounding. Abstracts of the 112th Annual Meeting of the American Association of Colleges of Pharmacy, San Antonio, Texas (2011). *American Journal of Pharmaceutical Education* 75:5 (2011).
32. Shrewsbury R.: An Analysis Requirement for Compounded Products. Is It Worth It? Abstracts of the 111th Annual Meeting of the American Association of Colleges of Pharmacy, Seattle, Washington (2010). *American Journal of Pharmaceutical Education* 74:5 (2010).
31. Robertson J., Shrewsbury R.: Conducting a Pharmaceutical Care Laboratory (PCL) Compounding Course via Video Conferencing. Abstracts of the 110th Annual Meeting of the American Association of Colleges of Pharmacy, Boston, Massachusetts. *American Journal of Pharmaceutical Education* 73:68 (2009).
30. Stegall-Zanation J., White-Harris C., Shrewsbury R., Reuning S.: A DVD Demonstration Tool to Enhance Knowledge of Curricular Courses. Abstracts of the 106th Annual Meeting of the American Association of Colleges of Pharmacy, Cincinnati, Ohio. *American Journal of Pharmaceutical Education* 69:404 (2005).

29. Shrewsbury R.P.: A Hybrid CD-Internet Delivery System for Pharmaceutical Care Laboratory Instruction. Abstracts of the 101st Annual Meeting of the American Association of Colleges of Pharmacy, San Diego, California. American Journal of Pharmaceutical Education 64, No. 4 Supplement:106S (2000).

28. Shrewsbury R.P., Deloatch K.H.: Lecture Outcome - Cape Outcome Review (LOCOR) Project. Abstracts of the 101st Annual Meeting of the American Association of Colleges of Pharmacy, San Diego, California. American Journal of Pharmaceutical Education 64, No. 4 Supplement:104S (2000).

27. Pittman A.W., Shrewsbury R.P., Bastow K.F., Campbell W.H., Christensen D.B., Dell K.A., Deloatch K.H., Joyner P.U., Raasch R.H.: A CD-ROM/Web-Based ACPE Self Study. Abstracts of the 101st Annual Meeting of the American Association of Colleges of Pharmacy, San Diego, California. American Journal of Pharmaceutical Education 64, No. 4 Supplement:103S (2000).

26. Pulliam C.C., Joyner P.U., Shrewsbury R., Carson S.W., Pittman A.W., Vaisman I.: World Wide Web Applications to Benefit Distance Learning in an External Doctor of Pharmacy Program. Abstracts of the 98th Annual Meeting of the American Association of Colleges of Pharmacy, Indianapolis, Indiana, p. 37 (1997).

25. Hadzija B.W., Shrewsbury R.P.: Two Basic Pharmacy Courses with Strong Experimental (Laboratory) Components. Abstracts of the 97th Annual Meeting of the American Association of Colleges of Pharmacy, Reno, Nevada, p. 148 (1996).

24. Ely J.G., Hall I.H., Elkins A.L., Shrewsbury R.P.: Transepithelial Transport of Boronated Dipeptides Across a Cell Model: HCT-8. Abstracts of the 142nd Annual Meeting of the American Pharmaceutical Association, Orlando, Florida (1994).

23. Sood A., Spielvogel B.F., Hall I.H., Cho M.J., Shrewsbury R.P., Powell W.J., Karthikeyan S., Miller III M.C., Elkins A.L.: Amine-carboxyboranes (Analogues of α -Amino Acids): Building Blocks for New Peptide Libraries. Abstracts of the Molecular Diversity Symposium, North Carolina Biotechnology Center, Research Triangle Park, North Carolina, pp. 14-15 (1994).

22. Shrewsbury R.P., Izydore R.A., Hall I.H.: 1-Acetyl-4-phenyl-1,2,4-triazolidine-3,5-dione. Drug Data Reports 17:393 (1993).

21. Elkins A.L., Cho M., Shrewsbury R.P., Sood A., Spielvogel B.F., Hall I.H., Miller III M.C.: Cellular Uptake and Tissue Disposition of Trimethylamine Carboxyborane-phenylalanine Methyl Ester in CF1 Mice and L-1210 Lymphoid Cells. Abstracts of the 8th International Meeting in Boron Chemistry, Knoxville, Tennessee (1993).

20. Hall I.H., Rajendran K.G., Chen S.Y., Burnham B.S., Murphy M.E., Shrewsbury R.P., Sood A., Spielvogel B.F., Morse K.W., Norwood III V.M.: Anti-inflammatory Activity and Cytokine Modulation of Trimethylamine Carboxyboranes and Related Derivatives. Abstracts of the 8th International Meeting in Boron Chemistry, Knoxville, Tennessee (1993).

19. Shrewsbury R.P., Oliver S.R., White L.G.: The Effect of Moderate Fluosol-DA Hemodilution on Desipramine Pharmacokinetics in the Rat. Abstracts of the 5th International Symposium on Blood Substitutes, San Diego, California, p. F38 (1993).

18. Collier A.M., Goldstein G.M., Shrewsbury R.P., Zhang C.A., Benowitz N.L., Williams R., Lewtas J.: Cotinine Elimination in Young Children as a Function of Age, Sex, and Race Following ETS Exposure. American Reviews of Respiratory Disease 145 (No. 4 Suppl., part 2):A532 (1992).

17. Shrewsbury R.P., White L.G.: Acute Effects of Moderate Fluosol-DA Hemodilution on Hepatic Microsomal and Nonmicrosomal Metabolism in Rats. Biomaterials, Artificial Cells, and Immobilization Biotechnology 19:485 (1991).

16. Shrewsbury R., Hong D., White L., Gordon T.: The Effect of Moderate Fluosol-DA or Hespan Hemodilution on the Nonmicrosomal Acetylation of Sulfamethazine in the Rat. Pharmaceutical Research 8(No. 10 Suppl.):234 (1991).

15. Burnham B.S., Wyrick S.D., Shrewsbury R.P., Shaw B.R., Sood A., Spielvogel B.F., Hall I.H.: Radiolabeled Synthesis of [2-¹⁴C]-2'-Deoxycytidine-3N-cyanoborane, Tissue Disposition in Mice, and Antineoplastic Mode of Action

in T-Molt Leukemic Cells. Abstracts of the Boron USA Workshop (BUSA II), Research Triangle Park, North Carolina, p. 63 (1990).

14. Shrewsbury R., White L.: Influence of the Method of Fluosol-DA Administration on Antipyrine Metabolism in the Rat. *Pharmaceutical Research* 7(No. 9 Suppl.):S262 (1990).

13. Shrewsbury R.P., White L.G.: The Effect of Moderate Hemodilution with Fluosol-DA or Normal Saline on Acetaminophen Metabolism in the Rat. *Pharmaceutical Research* 6(No. 9 Suppl.):S205 (1989).

12. Shrewsbury R., Oliver S., White L.: Effect of Varying Percentages of Hemodilution with Fluosol-DA or Normal Saline on Indocyanine Green and d-Propranolol Disposition in the Rat. *Pharmaceutical Research* 5(No. 10 Suppl.):S194 (1988).

11. Shrewsbury R.P., Oliver S.R., Lewis L.M., Anderson W.T., White L.G.: The Effect of Varying Percentages of Hemodilution With Fluosol-DA and Normal Saline on Antipyrine Metabolism in the Rat. *Journal of Pharmaceutical Sciences* 76:S96 (1987). Also in the Abstracts of the 1987 Fall Meeting of the Materials Research Society, Boston, Massachusetts, p. 347 (1987).

10. Shrewsbury R.P., Lewis L.M., Oliver S.R., Womble C.L.: Indocyanine Green and d-Propranolol Kinetics Following Moderate Fluosol-DA or Normal Saline Hemodilution. *Pharmaceutical Research* 4(No. 2 Suppl.):S119 (1987).

9. Shrewsbury R.P., Oliver S.R., Lewis L.M.: Dose Dependent Effect of Fluosol-DA and Normal Saline Hemodilution on Antipyrine Kinetics in the Rat. *Biomaterials, Artificial Cells, and Artificial Organs* 15:662 (1987).

8. Shrewsbury R.P.: Ampicillin Kinetics Following Partial Fluosol-DA or Normal Saline Blood Exchange. Abstracts of the 133rd Annual Meeting of the American Pharmaceutical Association, San Francisco, California, 16:127 (1986).

7. Shrewsbury R.P., Lewis L.M., Oliver S.R.: Phenytoin Kinetics Following Partial Fluosol-DA or Normal Saline Blood Exchange. *Pharmaceutical Research* 3(No. 5 Suppl.):161S (1986).

6. Shrewsbury R.P., Dorr M.B., Pollack G.M.: Effects of Anesthesia and Blood Replacement on Antipyrine Kinetics in Rats. Abstracts of the 38th National Meeting of the Academy of Pharmaceutical Sciences, San Antonio, Texas, 15:111 (1985).

5. Grippo A.A., Wyrick S.D., Shrewsbury R.P., Chaney S.G., Holbrook D.J., Lee K.H., Hall I.H.: The Disposition of (³H)-11,13-Dihydrohelenalin, a Derivative of the Sesquiterpene Lactone Helenalin. *Pharmacologist* 27:109 (1985).

4. Reynolds D.J., Wyrick S.D., Shrewsbury R.P., Hall I.H.: The Metabolic Disposition of the Hypolipidemic Agent o-(N-Phthalimido)acetophenone in Rodents. *Pharmacologist* 27:211 (1985).

3. White S.G., Wargin W.A., Shrewsbury R.P.: Antipyrine Kinetics Following Perfluorochemical (PFC) Emulsion-Blood Exchange. Abstracts of the 37th National Meeting of the Academy of Pharmaceutical Sciences, Philadelphia, Pennsylvania, 14:232 (1984).

2. Shrewsbury R.P., Swarbrick J., Newton K.S., Riggs L.C.: The Retention of Topically Applied Sodium Cromoglycate in the Albino Rabbit Eye. Abstracts of the 36th National Meeting of the Academy of Pharmaceutical Sciences, Montreal, Canada, 14:69 (1984).

1. Shrewsbury R.P., Wurster D.E., Dittert L.W.: Dose Dependent Effect of Disodium Etidronate on Salicylic Acid Absorption in the Rat. Abstracts of the 33rd National Meeting of the Academy of Pharmaceutical Sciences, San Diego, California, 12:170 (1982).

CD-ROMS:

3. Pittman A.W., Shrewsbury R.P., Bastow K.F., Campbell W.H., Christensen D.B., Dell K.A., Deloatch K.H., Joyner P.U., Raasch R.H., Early M.E.: Self-Study Report for the Doctor of Pharmacy Curriculum, University of North Carolina School of Pharmacy (1999).

2. Shrewsbury R.P.: Pharmaceutical Laboratory Learning CD, University of North Carolina School of Pharmacy (1999). Developed when bandwidth was limited. Delivered videos from CD but non-video content through internet.

1. Shrewsbury R.P.: Distance Learning CD, University of North Carolina School of Pharmacy (1999). For the External Doctor of Pharmacy program during transition from Bachelor of Science in Pharmacy to Doctor in Pharmacy programs

ONLINE MATERIALS:

5. Pharmaceutical Laboratory Web Site (<https://pharmlabs.unc.edu>). Currently developing expanded version (<https://wp.media.unc.edu/pharmlabs/>). A web resource for Doctor of Pharmacy level courses in Compounding and Pharmaceutics, 1996-present. The site has been listed as a [Basic Resource for Pharmaceutical Education by the American Association of Colleges of Pharmacy](#) since 1999. The site averages 1,800 viewers/month, with 37% of viewers from outside the United States.

4. Advanced Pharmaceutical Compounding. A Doctor of Pharmacy level course, Professional Compounding Centers of America, Inc., Houston, Texas, 2003-present, Version 2.0, 2009 - present.

3. Pharmacy Licensure Review (PLR). A study module for Doctor of Pharmacy students to prepare for the national pharmacy licensure examination (NAPLEX®), Professional Compounding Centers of America, Inc., Houston, Texas, 2002-2008.

2. Dosage Forms and Drug Delivery Systems (I and II). A Doctor of Pharmacy level course, Professional Compounding Centers of America, Inc., Houston, Texas, 2000-2006.

1. The Medicom® Family of Medical Information Databases for Retail and Hospital Pharmacies, Professional Drug Systems, Inc., St. Louis, Missouri, 1978-1985. A pharmacy managerial system plus drug-drug, drug-food, drug-OTC, drug-IV incompatibility, drug-allergy, and drug-chronic disease interaction databases. Utilized by:

- a. Retail Pharmacy – Medicare Glaser Corp. of St. Louis and Giant Foods Corp. of Washington, DC (licensed in 1983).
- b. Hospital Pharmacy – McDonnell Douglas Automation (McAuto®) which provided computer services to one out of six hospitals in the nation (licensed in 1983).
- c. Physician Private Practice – Compunet®, a computer system for physicians (licensed in 1983).

INVITED SEMINARS:

33. Open Forum for Beyond-Use Dates in the Compounding General Chapters <795> and <797>. United States Pharmacopeia, September 15, 2020, online forum.

32. USP Second Annual Workshop: Evolution and Advances in Compounding Evolution of Pharmaceutical Dosage Forms – What is on the Horizon for Compounders? United States Pharmacopeia, Washington, D.C., August 6, 2019.

31. The National Academies of Sciences, Engineering, Medicine, Health and Medicine Division, Board of Health Sciences Policy, Assessment of the Available Scientific Data Regarding the Safety and Effectiveness of Ingredients Used in Compounded Topical Pain Creams Study Sponsor Food and Drug Administration May 20, 2019 Background on the Curriculum and Training for Compounding Pharmacists.

30. “An Update on USP <795> and <797> Revisions,” 2018 NABP District III Meeting, Asheville, North Carolina, August 2018.

29. “Open Microphone Session on USP General Chapter <795> Pharmaceutical Compounding—Nonsterile Preparations” USP Headquarters, Washington, D.C., April 2018.

28. “Pharmaceutical Calculations for Pharmacy Technicians,” 2015 NCAP Annual Convention, Raleigh, North Carolina, November 2015.

27. “Pharmaceutical Calculations for Pharmacy Technicians,” 2014 NCAP Annual Convention, Raleigh, North Carolina, October 2014.

26. "Overview of Compounding in Today's Environment," 29th Annual Pharmacy Practice Seminar, Wilmington, North Carolina, August, 2014.
25. "Overview of Compounding in Today's Environment," 2013 NCAP Annual Convention, Raleigh, North Carolina, October, 2013.
24. "Building Web-based Classroom Resources on a Budget," Pre-conference Workshop, 12th International Conference of the Society for Information Technology and Teacher Education (SITE 2001), Orlando, Florida, March 2001.
23. "Doing IT on a \$8,000 Budget," Pre-conference Workshop, The Community College Foundation (TechEd01), Ontario, California, March 2001.
22. "Lessons in Creating and Integrating Instructional Multimedia," Carolina Technology Expo 2000, Chapel Hill, North Carolina, March 2000.
21. "Using a CD-Internet Hybrid Delivery System for Multimedia Learning," Carolina Technology Expo '99, Chapel Hill, North Carolina, February 1999.
20. "Teaching Pharmaceuticals on the Web," 99th Annual Meeting of the American Association of Colleges of Pharmacy, Boston, Massachusetts, July 1998.
19. "Acute Effects of Moderate Fluosol-DA Hemodilution on Hepatic Microsomal and Nonmicrosomal Metabolism in Rats," IV International Symposium on Blood Substitutes, Montreal, Canada, August 1991.
18. "The Effect of Fluosol-DA Hemodilution on Hepatic Microsomal and Nonmicrosomal Metabolism," Letterman Army Institute of Research, USAMRDC, Presidio of San Francisco, California, December 1989.
17. "The Effect of Perfluorochemical Emulsion Hemodilution on Cytochrome P-450 Activity in the Rat," Wayne State University, Department of Physiology, Detroit, Michigan, December 1988.
16. "The Effect of Varying Percentages of Fluosol-DA Hemodilution on Antipyrine Metabolism in the Rat," 1987 Fall Meeting of the Materials Research Society, Boston, Massachusetts, December 1987.
15. "Effect of Fluosol-DA Hemodilution on the Kinetics of Hepatically Extracted Drugs," Pharmaceutical Sciences Post-Graduate Research Conference, University of Kentucky College of Pharmacy, Lexington, Kentucky, October 1986.
14. "Workshop on Drug Product Selection," Area Health Education Center (AHEC), Albemarle Hospital, Elizabeth City, North Carolina, November 1986.
13. "Drug Product Selection Using Bioavailability Data," Area Health Education Center (AHEC), Wilson Memorial Hospital, Wilson, North Carolina, November 1986.
12. "Influence of Fluosol-DA on Antipyrine Kinetics in Blood Exchanged Rats," Pharmaceutical Sciences Post-Graduate Research Conference, University of Kentucky College of Pharmacy, Lexington, Kentucky, October 1984.
11. "The Retention of Topically Applied Sodium Cromoglycate in the Albino Rabbit Eye," 36th National Meeting of the Academy of Pharmaceutical Sciences, Montreal, Canada, May 1984.
10. "Criteria for Drug Product Selection," Area Health Education Center (AHEC), New Hanover Memorial Hospital, Wilmington, North Carolina, March 1984.
9. "Bioavailability Data in Drug Product Selection," Northwest Area Health Education Centers (AHEC), Bowman Gray School of Medicine and Catawba Memorial Hospital, Winston-Salem and Hickory, North Carolina, October 1983.

8. "Dose Dependent Effect of Disodium Etidronate on Salicylic Acid Absorption in the Rat," 33rd National Meeting of the Academy of Pharmaceutical Sciences, San Diego, California, November 1982.
7. "Basic Pharmacokinetics: A Continuing Education Program for Practicing Pharmacists," St. Louis, Missouri, October-November 1979.
6. "Monitoring Drug Therapy with Pharmacokinetic Parameters," The Jewish Hospital of Washington University, Department of Medicine, St. Louis, Missouri, November 1979.
5. "Changes in Pharmacokinetic Parameters During Pregnancy," The Jewish Hospital of Washington University, Department of Obstetrics and Gynecology, St. Louis, Missouri, October 1979.
4. "Influence of Disodium Etidronate on the Absorption of Model Compounds," University of North Carolina School of Pharmacy, Chapel Hill, North Carolina, March 1979.
3. "Absorption of Disodium Etidronate in the Rat, In Situ," Butler University School of Pharmacy, Indianapolis, Indiana, October 1978.
2. "Bioavailability Considerations of Theophylline and Related Drugs," St. Louis College of Pharmacy, St. Louis, Missouri, April 1977.
1. "Percutaneous Absorption of Hydroxyurea in Psoriatic Patients," Ferris State University School of Pharmacy, Big Rapids, Michigan, November 1976.

BOOK REVIEWS:

4. Shrewsbury R.P.: *The 795 Answer Book*. American Society of Health-System Pharmacists, Bethesda, MD, 2019.
3. Shrewsbury R.P.: Modern Pharmaceutics, 4th Edition, Marcel Dekker, New York, 2002. *American Journal of Pharmaceutical Education* 66:468-469 (2002).
2. Shrewsbury R.P.: Remington: The Science and Practice of Pharmacy, 20th Edition, Lippincott Williams & Wilkins, Baltimore, 2000. *American Journal of Pharmaceutical Education* 65:304 (2001).
1. Shrewsbury R.P.: Blood Substitutes: Preparation, Physiology and Medical Applications, Lowe K.C. (ed.), VCH Publishers, New York, 1988. *American Journal of Pharmaceutical Education* 53:464 (1989).

NON-REFEREED JOURNAL ARTICLES:

2. Shrewsbury R.P.: University of North Carolina at Chapel Hill School of Pharmacy Pharmaceutical Care Laboratories: Compounding Laboratory Curriculum and Renovation. *International Journal of Pharmaceutical Compounding* 10:353-358 (2006).
1. Shinn A.F., Shrewsbury R.P.: The Drug Interaction Dilemma. *Computertalk Directory of Pharmacy Systems-1983*. 34:39 (1983).

OTHER PUBLICATIONS:

3. Shinn A.F. (editor), Shrewsbury R.P. (associate editor): Medicomsm Drug Information Newsletter (published monthly), Professional Drug Systems, Inc., St. Louis, Missouri, 1983-1984.
2. Shrewsbury R.P.: Continuing Education in Biopharmaceutics and Pharmacokinetics, correspondence course for practicing pharmacists, through the C.E. Division of the St. Louis College of Pharmacy, St. Louis, Missouri, 1980-1986.
1. Shinn A.F. (editor), Shrewsbury R.P. (associate editor): Drug Information Center Newsletter (published monthly), St. Louis College of Pharmacy, St. Louis, Missouri, 1977-1978.

SCHOOL OF PHARMACY TEACHING RECORD

Course Number	Course Title	Year Taught
PHCY 850	Pharmacy Internship and Career Development	2021
PHCY 513	The Art of Pharmaceutical Compounding for Personalized Medicine	2015-present
PHCY 515	The Art of Pharmaceutical Compounding – Sterile Compounding	2019-present
PHCY 810	The Science of Pharmaceutical Compounding	2016-present
PHCY 888, 889	Non-Patient Care AIE	2017-present
PHCY 718	Patient Care Experience II	2017-2019
PHCY 631	Integrative Pharmacotherapy I	2017
PHCY 500	Applied Math	2014-2015
PHCY 401	Pharmaceutical Care Laboratory I	1997-2016
PHCY 402	Pharmaceutical Care Laboratory II	1997-2016
PHCY 403	Pharmaceutical Care Laboratory III	1997-2016
PHCY 404	Pharmaceutical Care Laboratory IV	1997-2016
PHCY 405	Pharmaceutical Care Laboratory V	1998-2015, 2017
PHAR 51L	Pharmaceutics Laboratory I	1996-1997
PHAR 61L	Pharmaceutics Laboratory II	1996-1997
PHAR 31L	Basic Pharmaceutics Laboratory I	1980-1981
PHAR 52L	Basic Pharmaceutics Laboratory I	1993-1996
PHAR 53L	Basic Pharmaceutics Laboratory II	1993-1996
PHAR 67L	Basic Pharmaceutics Laboratory II	1981
PHAR 53	Basic Pharmaceutics II	1984, 1988-1996
PHAR 162	Basic Pharmaceutics (Graduate Level)	1995-1997
PHAR 192	Cosmetic Science and Technology	1988-1996
PHAR 192L	Cosmetic Science and Technology Laboratory	1991-1996
PHAR 54	Biopharmaceutics and Pharmacokinetics	1982-1993
PHAR 54H	Honors, Biopharmaceutics and Pharmacokinetics	1983-1984, 1986, 1988
PHAR 81	Biopharmaceutics and Pharmacokinetics	1980-1981
PHAR 255	Advanced Biopharmaceutics	1981-1982, 1984, 1986-1989, 1991
PHAR 181	Clinical Pharmacokinetics	1981
PHAR 182	Clinical Pharmacokinetics	1981, 1983-1984, 1990-1991
PHAR 256	Advanced Pharmacokinetics	1984
MEDC 165	Drug Metabolism	1989-1993
PHAR 163	Novel Drug Delivery Systems	1983, 1985-1989, 1991
PHAR 21	The Pharmacist and the Health Care System	1989
NURS 266	Adv. Concepts in Primary Care II	1984-1986
PHAR 51	Pharmaceutical Calculations	1984
PHAR 361	Seminar	2005
PHAR 362	Seminar	2006
PHAR 171, 172	Undergraduate Research Project – Special Topics	1980-1982, 1984-1986

SCHOOL OF PHARMACY STUDENT RESEARCH AND HONORS PROJECTS

Analytical variability of compounded pluronic lecithin organogel: Differences between spectrophotometric and HPLC assays. Toneth Sang, Maura Kreiser, Taylor Mitchell, Sunwoo Bae, 2019 – present.

Potency Determination as an Additional Assessment Tool of Aseptic Compounding Technique, Jessica Newman, Sarah Mislán, Sherry Xia, 2018-present.

Disappearance of paraben preservatives in compounded metronidazole saturated solution. Taylor Mitchell, 2018.

Multiple potency determination as an additional assessment tool of aseptic compounding technique. Rebecca Lee, 2016 – 2018.

Effect of course structure on the accuracy of nonsterile compounded preparations. Koo Yeon Yoo, 2016 – 2017.

The impact of the pharmacist's intervention on patient education and dosing of suspensions. Emily Darst, 2016 – 2017.

Does student self-analysis of their nonsterile preparations improve compounding confidence? Honors project in pharmaceutical compounding. Elizabeth Weddendorf, 2014 – 2016.

Long-term results of an analytical assessment of student compounded preparations. Angie Roark, Spring 2013 – 2014.

Impact of required versus optional remake of a preparation on pharmacy students' compounding accuracy. Elizabeth Alford, 2013 – 2014.

Evaluation of pharmaceutical compounding videos. Honors project in pharmaceutical compounding. Hannah Park, 2012 – 2014.

Special projects in pharmaceutical compounding. Karen Keating, Spring 2010.

Special projects in pharmaceutical compounding. Jennie Broders, Spring 2007.

Stability of mail order pharmaceuticals – ointments (co-advise with Dr. Hadzija), Allyson Lyke, 1997 – 2000. Allyson's project received a Merck Award to enable her to present her work at the ACCP 2000 meeting. It was also selected as the best UNC SOP Honors project of the 1999-2000 academic year.

Stability of mail order pharmaceuticals – tablets (co-advise with Dr. Hadzija), Samir Moody, 1996 – 1998.

An HPLC procedure to determine plasma warfarin with both UV and fluorescent detection. Kevin Layne, Fall 1988.

Surgical procedures and blood sample collection procedures in rats hemodiluted with a perfluorochemical emulsion. Teresa Gordon, Fall 1988.

Surgical procedures and blood sample collection procedures in rats hemodiluted with a perfluorochemical emulsion. Keith Layne, Fall 1988.

Antipyrine pharmacokinetics in rats severely exchanged with a perfluorochemical emulsion. Tracy Berry, Fall 1984.

A spectrophotometric assay for lysozyme in human tears. Rebecca Rowell, Fall 1983.

Development of an HPLC method for determining antipyrine plasma concentrations in the rat. Michelle Baynot, Fall 1983.

Development of an everted rat intestine technique for measuring calcium-45 efflux from the intestine in the presence of calcium chelators. Peggy Gallagher, Fall 1982.

Development of a HPLC method for the simultaneous determination of quinidine, disopyramide, lidocaine, and dihydroquinidine in human plasma. Peggy Gallagher, Fall 1982.

The intestinal absorption of megadoses of nicotinic acid, pyridoxine, and ascorbic acid in the rat. Cindy Peters, Summer (II) 1982

The influence of body temperature on the intestinal absorption of drugs in the rat. Cindy Peters, Summer (I) 1982

The influence of disodium etidronate (EHDP) on calcium-45 efflux from the rat small intestine. Elizabeth Farrington, Spring 1982.

The influence of calcium and magnesium complexes of disodium etidronate (EHDP) on the absorption of salicylic acid in the rat. Lisa Morrison, Spring 1982.

Comparison of an in vitro and three in vivo techniques commonly used to evaluate the intestinal absorption of drugs in the rat. Herman Williford, Spring 1982.

Preparation and characterization of calcium and magnesium complexes of disodium etidronate (EHDP). Herman Williford, Spring 1982.

Development of a specimen fixation method of rat intestine suitable for use in scanning electron microscopy. Herman Williford, Fall 1981.

Development of a data fitting and simulation program package for one compartment pharmacokinetic drugs displaying Michaels-Menton elimination kinetics. Allen Bethea, Spring 1981.

GRANTS AND CONTRACTS

27. Eshelman School of Pharmacy, "Association of Pharmacy Bridging Course Outcomes with Admissions and Year 1 Performance (Study #15-2256)", 2015-2017, McLaughlin J., Principal Investigator, Shrewsbury R.P., Investigator.

26. Inmar, Inc. Contract, "Pharmacy and Pharmaceutical Regulatory Consultant Internship Funding Agreement," 2014-2015, Shrewsbury R.P., Principal Investigator, \$170,100.

25. Center of Educational Excellence, Eshelman School of Pharmacy Instructional Innovation Grant, University of North Carolina at Chapel Hill, "Pharmaceutical Care Lab Instructional Site Design & Media," 2010-2011, Shrewsbury R.P., Principal Investigator, \$17,050.

24. Center of Educational Excellence, Eshelman School of Pharmacy Instructional Innovation Grant, University of North Carolina at Chapel Hill, "Pharmaceutical Care Lab Instructional Video Collection," 2010, Shrewsbury R.P., Principal Investigator, \$26,675.

23. UNC-IBM Curricular Innovation Technology Grant, University of North Carolina at Chapel Hill, "Development of a Socratic Method 'Patient Simulation' Prototype," 2001-2002, Shrewsbury R.P., Principal Investigator. \$2,500.

22. Program of Excellence in Pharmaceutical Care Grant, School of Pharmacy, University of North Carolina at Chapel Hill, "Syndectic Technology: A Hybrid CD-Internet Delivery System for On Campus and Distance Education," 1997-1999, Shrewsbury R.P., Principal Investigator. \$8,000.

21. Chancellor's Task Force on Instructional Technology, University of North Carolina at Chapel Hill, "Initiating an Internet-Based External PharmD Curriculum," 1996-1997, Shrewsbury R.P., Principal Investigator. \$97,405.

20. Small Business Innovation Research Program, Phase II, Department of Energy, "New Gadolinium-Boron Compounds for Neutron Capture Therapy," 1993-1995, Spielvogel B., Principal Investigator, Shrewsbury R.P., Consultant. \$293,437.

19. Small Business Innovation Research Program, Phase II, National Institutes of Health, "Nucleoside Phosphate Analogues with Boronated Phosphates," 1993-1994, Spielvogel B., Principal Investigator, Shrewsbury R.P., Investigator. \$275,950.

18. Faculty Seed Grant Program, University of North Carolina at Chapel Hill School of Pharmacy, "Pharmacokinetics of Oligonucleotides," 1993-1994, Shrewsbury R.P., Principal Investigator. \$5,120.

17. Small Business Innovation Research Program, Phase I, National Institutes of Health, "Amine-boranes as New Topoisomerase II Inhibitors," 1993, Spielvogel B., Principal Investigator, Shrewsbury R.P., Investigator. \$34,816.

16. Small Business Innovation Research Program, Phase II, Department of Energy, "New Boron Containing Amino Acids and Peptides for Boron Neutron Capture Therapy," 1991-1993, Spielvogel B., Principal Investigator, Shrewsbury R.P., Investigator. \$320,800.

15. Small Business Innovation Research Program, Phase II, National Institutes of Health, "Oligonucleotides with Boronated Phosphorus Backbones," 1991-1993, Spielvogel B., Principal Investigator, Shrewsbury R.P., Investigator. \$393,560.

14. Small Business Innovation Research Program, Phase II, Department of Energy, "Novel Base Oligonucleotides for Boron Neutron Capture," 1990-1992, Spielvogel B., Principal Investigator, Shrewsbury R.P., Investigator. \$499,885.

13. EPA Cooperative Clinical Research Agreement, Environmental Protection Agency and the University of North Carolina at Chapel Hill Center for Environmental Medicine, "Collaborative Clinical Research on the Health Effects of Exposure to Air Pollutants," 1990-1995, Bromberg P., Principal Investigator, Shrewsbury R.P., Pharmacokinetics Consultant. \$14,502,436.

12. Biomedical Research Support Grant, National Institutes of Health, "Effect of Perfluorochemical Emulsion Hemodilution on Drug Kinetics," 1988-1989, Shrewsbury R.P., Principal Investigator. \$10,000.

11. National Heart, Lung, and Blood Institute, National Institutes of Health, "Antihyperlipidemic Phthalimide Analogues," 1986-1989, Hall I., Principal Investigator, Shrewsbury R.P., Investigator. \$229,492.

10. IBM Institutional Development Foundation Award, University of North Carolina at Chapel Hill, "Influence of Perfluorochemical Emulsion-Blood Exchange on the Pharmacokinetics of Select Drugs," 1985, Shrewsbury R.P., Principal Investigator. \$3,000.

9. National Heart, Lung, and Blood Institute, National Institutes of Health, "Effect of Perfluorochemical Exchange on Drug Kinetics," 1984-1987, Shrewsbury R.P., Principal Investigator. \$172,473.

8. Burroughs Wellcome Company, Research Triangle Park, North Carolina, "Collaborative Research Projects in Pharmacokinetics," 1984-1985, Shrewsbury R.P., Principal Investigator. \$6,000.

7. University Research Council Grant, University of North Carolina at Chapel Hill, "The Effect of Perfluorochemicals on the Pharmacokinetics of Model Drugs," 1984-1986, Shrewsbury R.P., Principal Investigator. \$1,500.

6. University Research Council Grant, University of North Carolina at Chapel Hill, "Evaluation of Potential Pro-drug Esters of Chloramphenicol," 1983-1985, Shrewsbury R.P., Principal Investigator. \$1,500.

5. Fisons Limited, Loughborough, England, "Disposition of Topically Applied Sodium Cromoglycate in the Albino Rabbit Eye," 1982-1983, Swarbrick J., Principal Investigator, Shrewsbury R.P., Investigator. \$5,994.

4. University Research Council Grant, University of North Carolina at Chapel Hill, "Mechanism of the Alteration in Gastrointestinal Membrane Caused by Disodium Etidronate (EHDP)," 1981-1983, Shrewsbury R.P., Principal Investigator. \$1,500.

3. University Research Council Grant, University of North Carolina at Chapel Hill, "Effect of Calcium Chelators on Gastrointestinal Membranes: Possible Mechanism of GI Distress," 1980-1982, Shrewsbury R.P., Principal Investigator. \$1,000.

2. Biomedical Research Grant, The Jewish Hospital of Washington University, St. Louis, Missouri, "Study of Intravenous Quinidine Gluconate in the Treatment of Major Ventricular Dysrhythmias During the Acute Phase of Myocardial Infarction," 1980-1982, Ruffy R., Principal Investigator, Shrewsbury R.P., Investigator. \$18,546.

1. Biopharmaceutics Review Branch, Food and Drug Administration, Washington, D.C. Monograph Preparation, "Bioavailability and Bioequivalence of Sodium Sulfoxone," 1975, Shrewsbury R.P., Consultant. \$500.

PROFESSIONAL SERVICE

INTERNATIONAL:

- Session Chairman, Blood Substitutes: Perfluorochemicals II, In-Vivo and Clinical Session. IV International Symposium on Blood Substitutes, Montreal, August 1991.
- Member, International Scientific Advisory Committee for the IV International Symposium on Blood Substitutes, Montreal, August 1991.
- Member, International Scientific Advisory Committee on Blood Substitutes for the International Society for Artificial Cells, Blood Substitutes, and Immobilization Biotechnology. 1990 – 2001.

NATIONAL:

- United States Pharmacopeia (USP) Expert Committee on Compounding, 2010 – 2025.
Vice Chair, 2020 – present.
Chair, General Chapter <795> Pharmaceutical Compounding-Nonsterile Preparations Subcommittee, 2015 – 2020.
Member, General Chapter <797> Pharmaceutical Compounding-Sterile Preparations, Subcommittee, 2010-2015.
Member, General Chapter <800> Hazardous Drugs-Handling in Healthcare Settings, Subcommittee, 2010 – 2015.
Member, General Chapter <1176> Balances and Volumetric Glassware Subcommittee, 2012 – 2015, 2017.
Member, Monograph Development Subcommittee, 2015 – present.
Chair, Monograph Modernization Subcommittee, 2010 – 2012.
- AACP Delegate for Eshelman School of Pharmacy, 2000 – 2001, 2016 – 2018.
- AACP Alternate Delegate for Eshelman School of Pharmacy, 1999 – 2000, 2015 – 2016.
- AACP COS Task Force on Compounding Education in Schools of Pharmacy, 2009 – 2011.
- Member, TechEd Advisory Committee to develop education technology conferences for the Community College Foundation of California, 2003 – 2004.
- Review Panel, AACP EBIR-SIG, 1997 – 2002.
- Grant Reviewer, Long-Term Research Grant Program, International Science Foundation, Washington, DC, 1994.
- External Peer Reviewer, Specific Research Grant Program, State Board of Education, State of Idaho, 1989 – 1991.
- Member, PPDM Research Achievement Award Selection Committee, American Association of Pharmaceutical Scientists. 1987 – 1989, 1990 – 1991.
- Program Co-Chairman, Session M3: Blood Cell and Plasma Substitutes, The Materials Research Society, Boston, November 1987.

- Member, Awards Committee, PDD Section, American Association of Pharmaceutical Scientists. 1986 – 1987.

UNIVERSITY OF NORTH CAROLINA:

- Health Science Library Advisory Committee, 1981 – 1985, 2001 – 2002, 2010 – 2019.
- UNC-ECSU Joint Pharmacy Program Task Force, 2002 – 2003.
- Living and Learning Programs, New First Year Initiative, 1999 – 2003.
- Advisor, Chi Alpha Omega, undergraduate student organization, 1996 – 1999.
- Advisor, Heels to Heaven, undergraduate student organization, 1990 – 1997.
- Faculty Council Alternate, 1983 – 1984, 1988 – 1989, 1991 – 1992, 1993 – 1994, 1995 – 1997.

ESHELMAN SCHOOL OF PHARMACY:

Committees:

- Leadership and Professional Development Stream, 2018 – 2020.
- Foundational Sciences Stream, 2017 – present.
- Admissions and Recruitment Committee, 1980 – 1981, 2015 – present.
- Scholarships and Awards Committee, 1982 – 1983, 1993 – 1999, 2000 – 2021.
- Graduate School Self-Study Oversight Committee, PACE Division representative, 2015 – 2016.
- PACE Division Evaluation Committee for Graduate School Review, 2015 – 2016.
- PACE Division Personnel Action Review Committee 2013.
- Honor Program Committee, 2010 – 2013.
- Technology and Pedagogy Subcommittee, Curriculum Transformation Steering Committee, 2012.
- Pharmaceutical Care Laboratory Faculty Search Committee, 2003 – 2004, 2010 – 2011.
- Pharmaceutical Care Laboratory Director Search Committee, 2003 – 2004.
- ACPE Self Study Organization and Administration Standards Subcommittee, 2010.
- ACPE Self-Study Accreditation Committee, 1998 – 2000, 2004 – 2007.
- Evaluation of Course Effectiveness Subcommittee, Pharmaceutics I and II, 2010.
- Safety Committee, 1980 – 1981, 1987 – 1989, 2005 – 2007.
- Faculty Retreat Planning Committee, 2005.
- School of Pharmacy Information Technology Advisory Committee, 1999 – 2004.
- Dean's Advisory Committee, 2003 – 2004.
- LOCOR Project, comparison of SOP instruction with CAPE Outcomes, 1999 – 2000.
- Self-Study Report for the Doctor of Pharmacy Curriculum (CDROM), Pittman A.W., Shrewsbury R.P., Bastow K.F., Campbell W.H., Christensen D.B., Dell K.A., Deloatch K.H., Joyner P.U., Raasch R.H., Early M.E., 1999.
- World Wide Web (W3) Committee, 1997 – 1999.
- Ad Hoc Committee to Expand the External PharmD, 1998 – 1999.
- Teleconferencing Working Group in the Program of Excellence in Pharmaceutical Care, 1996 – 1999.
- Webmaster, School of Pharmacy External PharmD website, 1997 – 1999.
- Webmaster, School of Pharmacy website, 1997 – 1998.
- Pharmaceutical Care Laboratory Coordinator Search Committee, 1994 – 1995.
- Course and Instructor Evaluation Committee, 1984 – 1995.
- Curriculum Committee, 1991 – 1993.
- Pharmacotherapy Joint Taskforce for the Commission on Implementing Pharmaceutical Care, 1992 – 1993.
- Joint PharmD/PhD Program Working Committee, 1984 – 1988.
- Learning Resources and Development Committee, 1987 – 1988.
- Committee for Review of Faculty BRSG Grants, 1986 – 1987.
- Committee on Student Database Development, 1986 – 1987.
- PharmD Advisory Committee: Curriculum and Evaluation, 1985 – 1987.
- Hollingsworth Scholar Selection Committee, 1984 – 1985, 1986 – 1987.
- Ad Hoc Committee for the Implementation of Hollingsworth Memorial Scholarships, 1983 – 1984.
- Ad Hoc Committee for the Evaluation of the Undergraduate Research Programs, 1983 – 1984.
- Audio-Visual Committee, 1981 – 1982.

Student Organizations:

- Advisor, Christian Pharmacy Student Fellowship, 1992 – 2000, 2005 – 2007.
- Advisor, Student Chapter of APhA, 1981 – 1986.
- Liaison, Student Senate, 1982 – 1983.

Mentorships:

- Pharmacy Residency Teaching Certificate Program mentor, 2015 – 2020.
Emily Maynard, BS, PharmD. NCSU College of Veterinary Medicine (2016–2017).
Erika Rost, BS, PharmD, NCSU College of Veterinary Medicine (2015–2016).
Taylor Dennison, PharmD, UNC Hospitals (2019–2020)
- AACP Walmart Scholar Program
Emily Darst, 2017.
Tanya Makhoulf, 2018.
Sarah Mislán, 2019.
Jessica Newman, 2020.
- Pharmaceutical Compounding APPE Academic Rotation
Koo Yeon Yoo, 2017.
Emily Darst, 2017.
Erin Brannick, 2018.
Kiah Hicks, 2018.
Michael Tichy, 2018.
Taylor Dennison, 2019.
Kenan Krim, 2019
Wendy Sun, 2019.
Yeon Soo (Jenny) Jin, 2020.
Yimo Wang, 2020.
Ellen Berggren Wright 2021.
Laurie Becker Hallegado 2021.
Lirong Yang 2021.
Yousra Bouzaghar 2021.

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