

## CURRICULUM VITAE

### **Daniel M. Witt, PharmD, FCCP, BCPS**

Vice Chair and Professor (Clinical), Department of Pharmacotherapy  
Assistant Dean of Clinical Affairs



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**Career Statement:** To improve clinical drug use processes through innovation, education, and research.

#### **EDUCATION**

- 1992                      Doctor of Pharmacy, University of Washington, Seattle, WA
- 1990                      Bachelor of Science (Pharmacy), University of Utah, Salt Lake City, UT (graduated Summa Cum Laude)
- 1984                      Associate of Science, Snow College, Ephraim, UT

#### **INTERNSHIP**

- 1990                      Pharmacy Intern, Smith's Food and Drug King, Salt Lake City, UT
- 1989                      Research Internship-Pharmaceutical R & D, Baxter Healthcare Corporation, Round Lake, IL
- 1988                      Undergraduate Research Fellowship, University of Utah Department of Pharmaceutics, Salt Lake City, UT

#### **RESIDENCY**

- 1992-93                      Advanced Residency in Primary Care and Family Medicine, University of Washington, Seattle, WA

1991-92 Clinical Pharmacy Residency, University of Washington and Harborview Medical Centers, Seattle, WA

### **PROFESSIONAL DEVELOPMENT**

2013 Colorado Mentor Training Program, Colorado Clinical and Translational Sciences Institute, University of Colorado Denver, Aurora, CO

2008 Focused Investigator Training Program, American College of Clinical Pharmacy Research Institute, Salt Lake City, UT

2007 Wood Badge, Long's Peak Council—Boy Scouts of America, Ben Delatour Scout Ranch, CO

2002 Management Development Series, Kaiser Permanente, Denver, CO

1998 Building Essential Supervisory Techniques (BEST), Kaiser Permanente, Denver, CO

### **LICENSURE TO PRACTICE**

Colorado, Utah

### **BOARD CERTIFICATION**

1993 Board Certified Pharmacotherapy Specialist (recertified 2000, 2007, and 2014)

1999 Certified Anticoagulation Care Provider (recertified in 2006)

### **PHARMACY PRACTICE**

2014-Present Professor (Clinical), Vice Chair Department of Pharmacotherapy, University of Utah College of Pharmacy, Salt Lake City, UT  
Responsible for: Supporting the Department's clinical enterprise and maximizing the clinical and academic potential of clinical faculty through performance management and integration of teaching, research and scholarship in the pharmacy practice setting. Alignment of current and future clinical practice sites, residencies, and interdisciplinary education within the strategic plans of the Department, College, University of Utah Hospitals and Clinics, Health Sciences Center, and the University of Utah. Working closely with the Outcomes Research Center and associated faculty to define and support clinical research initiatives that expand scholarly activity for clinical faculty. Responsible for Departmental budget related to clinical faculty, their practice sites and residencies. Anticoagulation clinical practice within University of Utah Hospitals and Clinics.

- 2010-2014      Senior Manager, Clinical Pharmacy Research and Applied Pharmacogenomics, Kaiser Permanente, Aurora, CO  
Responsible for: All aspects of departmental research agenda (department has published over 230 manuscripts), development of and oversight of Clinical Pharmacy Pharmacogenomics Service and Clinical Pharmacy Research Fellowship, and oversight of PGY2 Ambulatory Care Specialty Residency Program. Developed business case for and obtained approval and funding to start a Clinical Pharmacy Research Fellowship program—developed curriculum and oversaw recruiting and hiring of fellows. The fellowship program now involves a collaborative partnership with University of Colorado Denver Skaggs School of Pharmacy and Pharmaceutical Sciences. Direct reports include: Clinical Pharmacy Research Team (3.5 FTE), Clinical Pharmacy Specialist in Applied Pharmacogenomics (1.0 FTE), Clinical Pharmacy Research Fellows (2.0 FTE), and PGY2 Residency Program Supervisor (1.0 FTE)
- 2009-2010      Senior Manager, Clinical Pharmacy Services and Research, Kaiser Permanente, Aurora, CO  
Responsible for: Oversight of Clinical Pharmacy Anticoagulation and Anemia Service and Cardiac Risk Services and Clinical Pharmacy Research Team.
- 2004-2009      Manager, Clinical Pharmacy Services, Kaiser Permanente, Aurora, CO  
Responsible for: Oversight of Clinical Pharmacy Disease State Management Services, Clinical Pharmacy Anticoagulation and Cardiac Risk Services. Pioneered the concept of a Clinical Pharmacy Research Team (CPRT) to develop research expertise within the pharmacy department; obtained FTE approval, recruited and hired personnel and assumed oversight of this innovative team. Developed curriculum for Pharmacy Investigator Training program for PGY2 specialty residents taught by CPRT members.
- 2001-2004      Chief, Clinical Pharmacy Service, Kaiser Permanente, Westminster, CO  
Responsible for: Oversight of Clinical Pharmacy Anticoagulation and Cardiac Risk Services. Obtained approval and funding for Specialty Residency in Ambulatory Cardiology (focus areas in anticoagulation therapy, cardiac risk reduction, and heart failure management)—recruited and hired residents and assumed oversight of the program. Developed a structured process for generating research project ideas for PGY2 residents; and ensuring projects successfully navigate the IRB review process.

- 1997-2001      Supervisor, Clinical Pharmacy Anticoagulation Service, Kaiser Permanente, Westminster, CO  
Developed business case, obtained approval and funding for and recruited, hired and trained personnel for regional Clinical Pharmacy Anticoagulation Service. The service utilizes a unique centralized, telephonic model to provide comprehensive anticoagulation services to all anticoagulated patients in the Kaiser Permanente Colorado region.
- 1993-97        Clinical Pharmacy Specialist, Internal Medicine, Kaiser Permanente, Westminster, CO  
Responsible for: Establishing innovative ambulatory care clinical pharmacy services, precepting primary care specialty residents and pharmacy students, and providing direct patient care. Expanded existing anticoagulation therapy monitoring program to include entire population of anticoagulated members at the Westminster Medical Office and conducted research demonstrating improved quality of anticoagulation therapy with pharmacist management over usual care.

### **ACADEMIC APPOINTMENTS**

- 2014-Present      Assistant Dean for Clinical Affairs, University of Utah College of Pharmacy, Salt Lake City, UT, Appointment in the Dean's Office of the College of Pharmacy for current and future curricular development.
- 1995-2014        Clinical Associate Professor, University of Colorado Denver Skaggs School of Pharmacy and Pharmaceutical Sciences, Denver, CO (Clinical Assistant Professor 1995-2011)

### **ORGANIZATIONS**

- 1992-Present      American College of Clinical Pharmacy (Pharmacotherapy Exam Preparatory Course Planning Committee, 1996; Pharmacotherapy Self-Assessment Program, 4<sup>th</sup> Ed Editorial Board Member, 1999-2003; Elected to Research Institute Board of Trustees, 2009-2012)
- 1998-Present      Anticoagulation Forum (Board of Directors, 2009-2017; Co-Chair Anticoagulation Centers of Excellence Committee; Co-Chair Anticoagulation Boot Camp Program)
- 1999-Present      American Society of Health-Systems Pharmacists (Drug Therapy Literature Award Review Panel, 2014)
- 2003-Present      International Society on Thrombosis and Haemostasis (Co-Chair/Moderator for Oral Communication Session on VTE Epidemiology, 2015 Congress, Toronto, Ontario)

- 2014-Present      Academy of Health Science Educators
- 2015-Present      American Association of Colleges of Pharmacy
- 2016-Present      Utah Society of Health-System Pharmacists

## **JOURNAL ARTICLES**

### **Review Articles**

15. McGinnis B, Kauffman Y, Olson KL, **Witt DM**, Raebel MA. Interventions aimed at improving performance on medication adherence metrics. *International Journal of Clinical Pharmacy* 2014;36:20-25.
14. Heilmann RM, Campbell SM, Kroner BA, Proksel JR, Billups SJ, **Witt DM**, Helling DK. Evolution, current structure, and role of a primary care clinical pharmacy service in an integrated managed care organization. *Annals of Pharmacotherapy* 2013;47:124-31.
13. **Witt DM**. Approaches to Optimal Dosing of Vitamin K Antagonists. *Seminars in Thrombosis and Hemostasis* 2012;38:667-722.
12. **Witt DM**. Initiation and reinitiation of anticoagulation therapy. *Seminars in Hematology* 2011;48:295–301.
11. **Witt DM**. Quality measures and benchmarking for warfarin therapy. *Journal of Thrombosis and Thrombolysis* 2011;31:242-8.
10. **Witt DM**. Optimizing use of current anticoagulants. *Hematology/Oncology Clinics of North America* 2010;24:717-26.
9. **Witt DM**. The Kaiser Permanente Colorado Clinical Pharmacy Anticoagulation Service as a model of modern anticoagulant care. *Thrombosis Research* 2008;123:S36-S41.
8. **Witt DM**. Clinical and laboratory issues in the management of warfarin induced excessive anticoagulation. *Journal of Clinical Ligand Assay* 2005;28:141-146.
7. **Witt DM**, Tillman DJ. Management of excessive oral anticoagulation without clinically evident bleeding. *Clinical Hemostasis Review* 1999;13:10-11.
6. Jobe MA, Wallin K, Malone BJ, **Witt DM**. What patients taking warfarin need to know. *Clinical Hemostasis Review* 1999;Jan:10-11.
5. Tillman DJ, Offricht DM, **Witt DM**. Understanding warfarin resistance. *Clinical Hemostasis Review* 1998;Oct:15-16.
4. **Witt DM**, Tillman DJ. Clinical pharmacy anticoagulation services in a group model health maintenance organization. *Pharmacy Practice Management*

*Quarterly* 1998;18: 34-55.

3. **Witt DM**, Lousberg TR. Controversies surrounding estrogen use in postmenopausal women. *Annals of Pharmacotherapy* 1997;31:745-755.
2. **Witt DM**, Anderson L. Dornase alfa: a new option in the management of cystic fibrosis. *Pharmacotherapy* 1996;16:40-48.
1. **Witt DM**. Treatment of alcohol withdrawal in the hospitalized patient. *Hospital Pharmacy* 1992;27:1027-1032

### Guidelines

5. **Witt DM**, Clark NP, Kaatz S, Schnurr T, Ansell JE. Guidance for the practical management of warfarin therapy in the treatment of venous thromboembolism. *Journal of Thrombosis and Thrombolysis* 2016;41:187-205.
4. Holbrook A, Schulman S, **Witt DM**, Vandvik PO, Fish J, Kovaks MJ, Svensson PJ, Veenstra DL, Crowther M, Guyatt GH. Evidence-Based Management of Anticoagulant Therapy: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. *CHEST* 2012;141 (2 suppl):e152S-e184S.
3. Garcia D, Ageno W, Bussey H, Eikelboom J, Margaglione M, Marongiu F, Moia M, Palareti G, Pengo V, Poli D, Schulman S, **Witt D**, Wittkowsky A, Crowther M. Prevention and treatment of bleeding complications in patients receiving vitamin K antagonists, Part 1: Prevention. *American Journal of Hematology* 2009;84:546-7.
2. Garcia DA, **Witt DM**, Hylek E, Wittkowsky AK, Nutescu EA, Jacobson A, Moll S, Merli GJ, Crowther M, Earl L, Becker RC, Oertel L, Jaffer A, Ansell JE. Delivery of optimized anticoagulant therapy: consensus statement from the anticoagulation forum. *Annals of Pharmacotherapy* 2008;42:979-988.
1. American Society of Health-System Pharmacists. ASHP therapeutic position statement on the use of low-molecular-weight heparin for adult outpatient treatment of acute deep vein thrombosis. *American Journal of Health-System Pharmacists* 2004;61:1950-5. (Drafted document with Tillman DJ)

### Invited Commentaries

5. **Witt DM**. Review: rivaroxaban causes less fatal bleeding, but does not reduce mortality, compared with VKAs. *Annals of Internal Medicine* 2013;159:JC13.
4. **Witt DM**. Rivaroxaban and usual care had similar rates of recurrent VTE and bleeding in symptomatic PE. *Annals of Internal Medicine* 2012;157:JC2-6.
3. **Witt DM**. ACP Journal Club. Review: Positive D-dimer results predict recurrence after first unprovoked VTE regardless of test timing or cutpoint, or

patient age. *Annals of Internal Medicine* 2011;154:JC1-5.

2. **Witt DM**. ACP Journal Club. Weekly INR self-testing did not reduce stroke, major bleeding, or death more than monthly clinic testing. *Annals of Internal Medicine* 2011;154:JC1-4.
1. **Witt DM**, Siragusa S. Review: Long-term anticoagulation reduces recurrent venous thromboembolism. *ACP Journal Club* 2006;144:33.

### Case Reports

1. **Witt DM**, Ellsworth AJ, Leverssee J. Interaction between amiodarone and clonazepam. *Annals of Pharmacotherapy* 1993;27:1463-1464.

### Letters

6. Fang MC, Fan D, Sung SH, **Witt DM**, Yale SH, Steinhubl SR. Outcomes in adults with acute pulmonary embolism who are discharged from emergency departments: the cardiovascular research network venous thromboembolism study. *JAMA Internal Medicine* 2015;175:1060-1062.
5. Nutescu EA, Wittkowsky AK, **Witt DM**, Kaatz S, Ansell J, Burnett A, Garcia D, Lopes RD, Oertel L, Schnurr T, Streiff M, Wirth D, Crowther M. Integrating electronic health records in the delivery of optimized anticoagulation therapy. *Annals of Pharmacotherapy* 2015;49:125-126.
4. Ansell J, Crowther M, Burnett A, Garcia D, Kaatz, Lopes RD, Nutescu E, Oertel L, Schnurr T, Streiff M, Wirth D, **Witt D**, Wittkowsky A, for the Anticoagulation Forum. Comment on: Editorial by Husted et al. "Non-vitamin K oral anticoagulants (NOACs): No longer new or novel" (*Thromb Haemost* 2014;112:781-782). *Thrombosis and Haemostasis* 2014;112:841
3. Irwin AN, McCool KH, Delate T, **Witt DM**. Warfarin dosing changes after bariatric surgery: Implications on the mechanism for altered dose requirements and safety concerns—an alternative viewpoint.—Reply. *Pharmacotherapy* 2014;34:e26–e29.
2. **Witt DM**, Delate T, Crowther MA. Resumption of warfarin therapy after gastrointestinal tract bleeding: benefit or bias?—Reply. *JAMA Internal Medicine* 2013;173:833-834.
1. **Witt DM**, Patel R, Tillman DJ, Wilkinson DS. Vitamin k for warfarin associated coagulopathy. *Lancet* 2001;357:718.

### Original Research

58. Fang MC, Fan D, Sung SH, **Witt DM**, Schmelzer JR, Steinhubl SR, Yale SH, Go AS. Validity of using inpatient and outpatient administrative codes to identify acute venous thromboembolism: the CVRN VTE study. *Medical Care* 2016; Epub ahead of print

57. Delate T, Hsiao W, Kim B, **Witt DM**, Meyer MR, Go AS, Fang MC. Assessment of algorithms to identify patients with thrombophilia following venous thromboembolism. *Thrombosis Research* 2016;137:97-102.
56. Li G, Holbrook A, Delate T, **Witt DM**, Levine MAH, Thabane L. Prediction of individual combined benefit and harm for patients with atrial fibrillation considering warfarin therapy: a study protocol. *BMJ Open* 2015;5:e009518
55. Meyer MR, **Witt DM**, Delate T, Johnson SG, Fang M, Go A, Clark NP. Thrombophilia testing patterns amongst patients with acute venous thromboembolism. *Thrombosis Research* 2015; Epub ahead of print
54. **Witt DM**, Clark NP, Martinez K, Schroeder A, Garcia D, Crowther MA, Ageno W, Dentali F, Ye X, Hylek E, Delate T. Risk of thromboembolism, recurrent hemorrhage, and death after warfarin therapy interruption for intracranial hemorrhage. *Thrombosis Research* 2015;136:1040-1044.
53. Rose A, Ozonoff A, Delate T, **Witt DM**. Comparing Summary Measures of INR Control. *Circulation: Cardiovascular Quality & Outcomes* 2015;8:524-531.
52. Clark NP, **Witt DM**, Davies LE, Saito EM, McCool KH, Douketis JD, Metz KR, Delate T. Bleeding, recurrent venous thromboembolism, and mortality risks during warfarin interruption for invasive procedures. *JAMA Internal Medicine* 2015;175:1163-1168.
51. Chai-Adisaksopha C, Hillis C, Monreal M, **Witt DM**, Crowther M. Thromboembolic events, recurrent bleeding and mortality after resuming anticoagulant following gastrointestinal bleeding: a meta-analysis. *Thrombosis and Haemostasis* 2015;114:819-825.
50. Kauffman YS, Schroeder AE, **Witt DM**. Patient specific factors influencing INR monitoring adherence. *Pharmacotherapy* 2015;35:740-747.
49. Martinez K, Kosirog E, Billups SJ, Clark NP, Delate T, **Witt DM**. Clinical outcomes and adherence to guideline recommendations during the initial treatment of acute venous thromboembolism. *Annals of Pharmacotherapy* 2015;49:869-875.
48. Jenner K, Simmons BJ, Delate T, Clark NP, Kurz D, **Witt DM**. An Education Program for Patient Self-Management of Warfarin. *The Permanente Journal* 2015;19:33-38.
47. Olson KL, Irwin AN, Billups SJ, Delate T, Johnson SG, Kurz D, **Witt DM**. Impact of a clinical pharmacy research team on pharmacy resident research. *American Journal of Health-Systems Pharmacy* 2015;72:309-316.
46. Cho SE, Delate T, **Witt DM**, Clark NP. Thromboembolic and Bleeding Outcomes of Extended Duration Low-Intensity Warfarin Following Elective Total Knee



- Arthroplasty. *Thrombosis Research* 2015;135:267-271.
45. Wood MD, Delate T, Clark M, Clark NP, Horn JR, **Witt DM**. An evaluation of the potential drug interaction between warfarin and levothyroxine. *Journal of Thrombosis and Haemostasis* 2014;12:1313-1319.
  44. Irwin AN, Johnson SG, Joline BR, Delate T, **Witt DM**. A descriptive evaluation of warfarin use in patients with pulmonary arterial hypertension. *Thrombosis Research* 2014;133:790-794.
  43. Clark NP, Delate T, Riggs CS, **Witt DM**, Hylek EM, Garcia DA, Ageno W, Dentali F, Crowther MA, for the Warfarin-Associated Research Projects and Other Endeavors Consortium. Warfarin interactions with antibiotics in the ambulatory care setting. *JAMA Internal Medicine* 2014;174:409-416.
  42. Irwin AN, Olson KL, Joline BR, **Witt DM**, Patel RJ. Challenges to publishing pharmacy resident research projects from the perspectives of residency program directors and residents. *Pharmacy Practice* 2013;11:166-72.
  41. **Witt DM**, Delate T, Hylek EM, Clark NP, Crowther MA, Dentali F, Ageno W, Martinez KD, Garcia DA. Effect of warfarin on intracranial hemorrhage incidence and fatal outcomes. *Thrombosis Research* 2013;132:770-775.
  40. **Witt DM**, Delate T, Clark NP, Garcia DA, Hylek EM, Ageno W, Dentali F, Crowther MA. Nonadherence with INR monitoring and anticoagulant complications. *Thrombosis Research* 2013;132:e124-e130.
  39. Lam J, Schulman S, **Witt DM**, Vandvik PO, Qayyum F, Holbrook AM. Anticoagulation control with daily low-dose vitamin K to reduce clinically adverse outcomes and international normalized ratio variability: a systematic review and meta-analysis. *Pharmacotherapy* 2013;33:1184-1190.
  38. Irwin AI, McCool KH, Delate T, **Witt DM**. Assessment of warfarin dosing requirements after bariatric Surgery in patients requiring long-term warfarin therapy. *Pharmacotherapy* 2013;33:1175-1183.
  37. Clark NP, Cho SE, Delate T, **Witt DM**. Thromboembolic and bleeding outcomes of low-intensity warfarin thromboprophylaxis following elective total hip arthroplasty. *Thrombosis Research* 2013;131:390-5.
  36. Dentali F, Poli D, Scoditti U, di Minno MND, Stefano VD, Siragusa S, Kostal M, Palareti G, Sartori MT, Grandone E, Vedovati MC, Ageno W, Falanga A, Lerede T, Bianchi M, Testa S, **Witt D**, et al. Long-term outcomes of patients with cerebral vein thrombosis: A multicenter study. *Journal of Thrombosis and Haemostasis* 2012;10:1297-1301.
  35. Simmons BJ, Jenner KM, Delate T, Clark NP, Kurz D, **Witt DM**. Pilot study of a novel patient self-management program for warfarin therapy using venipuncture-

- acquired international normalized ratio monitoring. *Pharmacotherapy* 2012;32:1078-84.
34. **Witt DM**, Delate T, Garcia DA, Clark NP, Hylek EM, Ageno W, Dentali F, Crowther MA. Risk of Thromboembolism, Recurrent Hemorrhage, and Death After Warfarin Therapy Interruption for Gastrointestinal Tract Bleeding. *Archives of Internal Medicine* 2012;172:1484-1491.
  33. Delate T, **Witt DM**, Ritzwoller D, Weeks JC, Kushi L, Hornbrook MC, Aiello Bowles EJ, Schrag D. Outpatient use of low molecular weight heparin monotherapy for first-line treatment of venous thromboembolism in advanced cancer. *The Oncologist* 2012;17:419-427.
  32. Olson KL, Holmes M, Dang C, Patel RJ, **Witt DM**. Publication rates of abstracts presented by residents at the western states conference. *American Journal of Health-Systems Pharmacy* 2012;69:59-62.
  31. Dowd MB, Kippes KA, **Witt DM**, Delate T, Martinez K. A randomized controlled trial of empiric warfarin dose reduction with the initiation of doxycycline therapy. *Thrombosis Research* 2012;130:152-156.
  30. Dentali F, Marchesi C, Pierfranceschi MG, Crowther M, Garcia D, Hylek E, **Witt DM**, Clark NP, Squizzato A, Imberti D, Ageno W. Safety of prothrombin complex concentrates for rapid anticoagulation reversal of vitamin K antagonists. *Thrombosis and Haemostasis* 2011;106:429-38.
  29. Dentali F, Donadini MP, Clark N, Crowther MA, Garcia D, Hylek E, **Witt DM**, Ageno W, for the Warfarin Associated Research Projects and Other Endeavors (WARPED) Consortium. Brand name versus generic warfarin: a systematic review of the literature. *Pharmacotherapy* 2011;31:386-93.
  28. Dowd MB, Vavra KA, **Witt DM**, Delate T, Martinez K. Empiric warfarin dose adjustment with prednisone therapy. A randomized, controlled trial. *Journal of Thrombosis and Thrombolysis* 2011;31:472-7.
  27. Herner SJ, Paulson DC, Delate T, **Witt DM**, Vondracek TG. Evaluation of venous thromboembolism risk following hospitalization. *Journal of Thrombosis and Thrombolysis* 2011;32:32-39.
  26. Crowther MA, Garcia D, Ageno W, Wang L, **Witt DM**, Clark NP, Blostein MD, Kahn SR, Schulman S, Kovacs M, Rodger MA, Wells P, Anderson D, Ginsberg J, Selby R, Siragusa S, Silingardi M, Dowd MB, Kearon C. Oral vitamin K effectively treats international normalized ratio (INR) values in excess of 10. Results of a prospective cohort study. *Thrombosis and Haemostasis* 2010;104:118-121.
  25. Clark NP, Delate T, Cleary SJ, **Witt DM**. Unfractionated heparin dose requirements targeting intermediate intensity antifactor Xa concentration during

- pregnancy. *Pharmacotherapy* 2010;30:369–374.
24. Clark NP, Delate T, Cleary SJ, **Witt DM**. Analysis of unfractionated heparin dose requirements to target therapeutic anti-Xa intensity during pregnancy. *Thrombosis Research* 2010;125:402-5.
  23. **Witt DM**, Delate T, Clark NP, Martell C, Tran T, Crowther MA, Garcia DA, Ageno W, Hylek EM; on behalf of the Warfarin Associated Research Projects and other Endeavors (WARPED) Consortium. Twelve-month outcomes and predictors of very stable INR control in prevalent warfarin users. *Journal of Thrombosis and Haemostasis* 2010;8:744-9.
  22. Dentali F, Ageno W, **Witt D**, Malato A, Clark N, Garcia D, McCool K, Siragusa S, Dyke S, Crowther M, for the WARPED Consortium. Natural history of mesenteric venous thrombosis in patients treated with vitamin K antagonists - A multi-centre, retrospective cohort study. *Thrombosis and Haemostasis* 2009;102:501-504.
  21. **Witt DM**, Delate T, McCool KH, Dowd MB, Clark NP, Crowther MA, Garcia DA, Ageno W, Dentali F, Hylek EM, Rector WG, on behalf of the WARPED Consortium. Incidence and predictors of bleeding or thrombosis after polypectomy in patients receiving and not receiving anticoagulation therapy. *Journal of Thrombosis and Haemostasis* 2009;7:1982-9.
  20. **Witt DM**, Delate T, Clark NP, Martell C, Tran T, Crowther MA, Garcia DA, Ageno W, Hylek EM, on behalf of the WARPED Consortium. Outcomes and predictors of very stable INR control during chronic anticoagulation therapy. *Blood* 2009;114:952-956.
  19. Olson KL, Delate T, Johnson SG, Wilson ED, **Witt DM**. Incidence of hemorrhage among anticoagulated patients receiving antiplatelet therapy after percutaneous coronary intervention. *Journal of Thrombosis and Thrombolysis* 2009;29:316-321.
  18. Hill RR, Martinez KD, Delate T, **Witt DM**. A descriptive evaluation of warfarin use in patients receiving hospice or palliative care services. *Journal of Thrombosis and Thrombolysis* 2009;27:334-339.
  17. Clark NP, Delate T, **Witt DM**, Parker S, McDuffie R. A descriptive evaluation of unfractionated heparin use during pregnancy. *Journal of Thrombosis and Thrombolysis* 2009;27:267-273.
  16. Crowther MA, Ageno W, Garcia D, Wang L, **Witt DM**, Clark NP, et al. Oral vitamin K versus placebo to correct excessive anticoagulation in patients receiving warfarin. *Ann Intern Med* 2009;150:293-300.
  15. Clark NP, **Witt DM**, Delate T, Trapp M, Garcia D, Ageno W, Hylek EM, Crowther MA, on behalf of the WARPED Consortium. Thromboembolic consequences of subtherapeutic anticoagulation in patients stabilized on warfarin therapy: the low

- INR study. *Pharmacotherapy* 2008;28:960-967.
14. Johnson SG, Rogers K, Delate T, **Witt DM**. Outcomes associated with combined antiplatelet and anticoagulant therapy. *CHEST* 2008;133:948-954.
  13. Johnson SG, **Witt DM**, Eddy TR, Delate T. Warfarin and antiplatelet combination use among commercially-insured patients enrolled in an anticoagulation management service. *CHEST* 2007;131:1500-1507.
  12. Delate T, **Witt DM**, Jones JR, Bhardwaja B, Senser M. Falsely elevated INR values in patients undergoing anticoagulation therapy: a descriptive evaluation. *CHEST* 2007;131:816-22.
  11. Anich KV, **Witt DM**, Delate T, Shanahan RL, Patel RJ. A descriptive evaluation of routine complete blood count monitoring in patients receiving anticoagulation therapy. *Journal of Thrombosis and Thrombolysis* 2005;20:183-188.
  10. Johnson SG, **Witt DM**, Delate T, Sadler MA. An examination of the association between therapeutic anticoagulation control and glycemic control for patients with diabetes on oral anticoagulation therapy. *Journal of Thrombosis and Thrombolysis* 2005;19:209-212.
  9. Raebel MA, **Witt DM**, Carroll NM, Magid DJ. Warfarin monitoring in ambulatory older individuals receiving antimicrobial therapy. *Pharmacotherapy* 2005;25:1055-1061.
  8. **Witt DM**, Sadler MA, Shanahan R, Mazzoli G, Tillman TJ. Effect of a centralized clinical pharmacy anticoagulation service on the outcomes of anticoagulation therapy. *CHEST* 2005;127:1515-1522.
  7. Chuang J, Sadler MA, **Witt DM**. Impact of evacuated collection tube fill volume and mixing on routine coagulation testing using 2.7mL (pediatric) tubes. *CHEST* 2004;126:1262-1266.
  6. **Witt DM**, Humphries TL. A retrospective evaluation of the management of excessive anticoagulation in an established clinical pharmacy anticoagulation service compared to traditional care. *Journal of Thrombosis and Thrombolysis* 2003;15:113-118.
  5. **Witt DM**, Tillman DJ, Evans CM, Plotkin TV, Sadler MA. Evaluation of the clinical and economic impact of a brand name to generic warfarin sodium conversion program. *Pharmacotherapy* 2003;23:360-368.
  4. Tillman DJ, Charland S, **Witt DM**. Evaluation of an outpatient deep vein thrombosis treatment program in a group model health maintenance organization. *Archives of Internal Medicine* 2000;160:2926-2932.

3. Patel RJ, **Witt DM**, Saseen JJ, Tillman DJ, Wilkinson DS. Randomized, placebo-controlled trial of oral phytonadione for excessive anticoagulation. *Pharmacotherapy* 2000;20:1159-1166.
2. Lousberg TR, **Witt DM**, Beall DG, Carter BL, Malone D. Evaluation of excessive anticoagulation in a group model health maintenance organization. *Archives of Internal Medicine* 1998;158:528-534.
1. Kradjan WA, **Witt DM**, Opheim KE, Wood FJ. Lack of interaction between glipizide and co-trimoxazole. *Journal of Clinical Pharmacology* 1994;34:997-1002.

### **BOOK CHAPTERS**

11. **Witt DM**, Clark NP, Vazquez S. Venous Thromboembolism. In: DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM, eds. *Pharmacotherapy: A Pathophysiologic Approach*, 10<sup>th</sup> ed. McGraw-Hill Medical (in press)
10. **Witt DM**, Clark NP. Venous Thromboembolism. In: DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM, eds. *Pharmacotherapy: A Pathophysiologic Approach*, 9<sup>th</sup> ed. McGraw-Hill Medical
9. **Witt DM**, Clark NP. Anticoagulant Drugs: Current and Novel. In: Ferro A, Garcia D, eds. *Antiplatelet and Anticoagulation Therapy*. Springer
8. McCool KH, **Witt DM**. Pharmacology of Parenteral Anticoagulants. In: Fang MC, ed. *Inpatient Anticoagulation*, 1st ed. Wiley-Blackwell
7. **Witt DM**. Atrial fibrillation. In: Dager WE, Gulseth MP, Nutescu EA, eds. *Anticoagulation Therapy: A Point of Care Guide*. American Society of Health-System Pharmacists
6. **Witt DM**, Haines ST, Nutescu E. Venous Thromboembolism. In: DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM, eds. *Pharmacotherapy: A Pathophysiologic Approach*, 8<sup>th</sup> ed. McGraw-Hill Medical
5. **Witt DM**. Improving the Quality of Anticoagulation Therapy Management. In: Ansell JE, Oertel LB, Wittkowsky AK, eds. *Managing Oral Anticoagulation Therapy: Clinical and Operational Guidelines*, 3<sup>rd</sup> ed. Wolters Kluwer/Facts & Comparisons
4. Haines ST, **Witt DM**, Nutescu E. Venous Thromboembolism. In: DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM, eds. *Pharmacotherapy: A Pathophysiologic Approach*, 7<sup>th</sup> ed. McGraw-Hill Medical
3. Haines ST, Zeolla M, **Witt DM**. Venous Thromboembolism. In: DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM, eds. *Pharmacotherapy: A Pathophysiologic Approach*, 6<sup>th</sup> ed. McGraw-Hill Medical

2. **Witt DM**, Tillman DJ. Thrombosis. In: Bertch K, Dunsworth T, Fagan S, Hayney M, Mueller B, O'Donnell D, et al. eds. Pharmacotherapy Self-Assessment Program, 4<sup>th</sup> ed. Kansas City: ACCP:85-122
1. **Witt DM**, Ellsworth AJ. Common infections in ambulatory care practice: part I. In: Carter BL, Lake KD, Raebel MA, Bertch KE, Israel MK, Jermain DM, et al., eds. Pharmacotherapy Self-Assessment Program, 3rd ed. Kansas City: ACCP, 1998:25-72

### **BOOKS**

1. Ellsworth AJ, **Witt DM**, Dugdale DC, Oliver LM. Mosby's Medical Drug Reference 2006. St. Louis: Mosby, 2005 (Revised and republished annually 1997-2006)

### **ABSTRACTS**

32. Singhal M, LaFleur J, Biskupiak J, McAdam-Marx C, **Witt DM**, Nelson R. Role of glycemic control in development of atrial fibrillation in patients with type 2 diabetes mellitus. ISPOR 21st Annual International Meeting, Washington, DC, May 2016
31. Cox N, Vazquez S, Johnson S, Rondina M, Kaplan D, Fleming R, Ma J, **Witt DM**. Descriptive analysis of thrombophilia testing in hospitalized and emergency department patients. The University Health System Consortium Annual Conference, New Orleans, LA, December 2015
30. Saito EM, Clark NP, **Witt DM**, Davies LE, McCool KH, Douketis JD, Metz KR, Delate T. Evaluation of venous thromboembolism risk stratification for periprocedural warfarin management. The ACCP Global Conference on Clinical Pharmacy (Finalist in Best Resident/Fellow Poster competition), San Francisco, CA, October 2015
29. Kauffman Y, Schroeder A, **Witt DM**. Patient Specific Factors Influencing INR Monitoring Adherence. The ACCP Global Conference on Clinical Pharmacy, San Francisco, CA, October 2015
28. Douketis J, Spyropoulos A, Kaatz S, Caprini J, Dunn A, Garcia D, Jacobson A, Jaffer A, Kindzelski A, Schulman S, Turpie AG, Becker R, Clark N, Conti B, Ellsworth S, Harrington R, Kong D, Johnson G, Krishnamoorthy A, Palmeri S, Parker W, Saucedo J, Schoch P, Tallman D, **Witt D**, Hasselblad V, Ortel TL, for the BRIDGE Study Investigators. Bridging Anticoagulation in Patients who Require Temporary Interruption of Warfarin Therapy for an Elective Invasive Procedure or Surgery (The BRIDGE Trial). XXIV Congress of the International Society of Thrombosis and Haemostasis, Toronto, Ontario, June 2015
27. Hsiao W, Delate T, **Witt DM**, Meyer MR, Go A, Fang M, Kim B. Assessment of algorithms to identify patients with thrombophilia following venous thromboembolism. 56th American Society of Hematology Annual Meeting and

Exposition, San Francisco, CA, December 2014

26. Meyer ML, Delate T, Johnson SG, **Witt DM**. Thrombophilia testing among patients with venous thromboembolism. 60<sup>th</sup> Annual Meeting of the Scientific and Standardization Committee of the International Society of Thrombosis and Haemostasis, Milwaukee, WI, June 2014
25. Schroeder A, Clark N, Johnson S, Delate T, **Witt DM**. Effect of Aspirin Discontinuation in Select Patient Populations on Concomitant Warfarin + Aspirin Therapy. Academy of Managed Care Pharmacy Meeting, Tampa, FL, April 2014
24. Clark NP, Delate T, Riggs CS, **Witt DM**, Hylek EM, Garcia DA, Ageno W, Dentali F, Crowther MA. Analysis Of Warfarin Drug-Drug Interactions With Antibiotics In The Ambulatory Care Setting. 55<sup>th</sup> American Society of Hematology Annual Meeting and Exposition, New Orleans, LA, December 2013
23. Lam J, Schulman S, **Witt DM**, Vandvik PO, Qayyum F, Holbrook AM. Anticoagulation control with daily low-dose vitamin K to reduce clinically adverse outcomes and INR variability: a systematic review and meta-analysis. Canadian Association for Population Therapeutics (CAPT) Annual Conference, Toronto, Ontario, November 2013
22. Irwin AI, McCool KH, Delate T, **Witt DM**. Assessment of warfarin requirements in post-bariatric surgery patients. ACCP Annual Meeting (Chosen for platform presentation, Awarded Best Resident/Fellow Poster), Hollywood, FL, October 2012
21. **Witt DM**, Delate T, Garcia DA, Clark NP, Hylek EM, Ageno W, Dentali F, Crowther MA. Risk of thromboembolism, recurrent bleeding and death after warfarin interruption for gastrointestinal bleeding. 58<sup>th</sup> Annual Meeting of the Scientific and Standardization Committee of the International Society of Thrombosis and Haemostasis (Chosen for oral presentation), Liverpool, UK, June 2012
20. **Witt DM**, Delate T, Clark NP, Garcia DA, Hylek EM, Ageno W, Dentali F, Crowther MA. Nonadherence with INR monitoring and anticoagulant complications. ASHP Summer Meeting, Baltimore, MD, June 2012
19. Olson KL, Dang C, Holmes M, Patel RJ, **Witt DM**. Publication rates of Kaiser Permanente Colorado pharmacy residency projects. ASHP Mid-year Clinical Meeting, New Orleans, LA, December 2011
18. Olson KL, Holmes M, Dang C, Patel RJ, **Witt DM**. Publication rates of abstracts presented at the Western States Residency Conference. ASHP Summer Meeting, Denver, CO, June 2011
17. Cho SE, Clark NP, Delate T, **Witt DM**. Low-intensity warfarin thromboprophylaxis

- after hip replacement surgery. Anticoagulation Forum, Boston, MA, May 2011
16. Delate T, **Witt D**, Ritzwoller D, Latimer S, Clark A, Schrag S, Weeks JC, Kushi L, Hornbrook MC. Anticoagulant treatment of venous thromboembolism in cancer patients: preliminary findings. 17th Annual HMO Research Network Conference, Boston, MA, March 2011
  15. Go AS, Fan D, Chang Y, Chan J, Lieu TA, Magid DJ, Schmelzer JR, Shah NR, **Witt DM**, Yale SH, Sung SH, Singer DE, for the CVRN WAVE Study Investigators. Quality of Anticoagulation Management in Atrial Fibrillation and Venous Thromboembolism: The CVRN WAVE Study. American Heart Association Scientific Sessions, Chicago, IL, November 2010
  14. **Witt DM**, Delate T, Clark NP, Martell C, Tran T, Crowther MA, Garcia DA, Ageno W, Hylek EM. Evaluating the Feasibility of Less Frequent INR Testing During Chronic Anticoagulation Therapy. XXII Congress of the International Society of Thrombosis and Haemostasis, Boston, MA, July 2009
  13. **Witt DM**, Delate T, McCool KH, Dowd MB, Clark NP, Crowther MA, Garcia DA, Ageno W, Dentali F, Hylek EM, Rector W. Incidence and Predictors of Serious Bleeding following Polypectomy in Patients Receiving and Not Receiving Oral Anticoagulation Therapy. XXII Congress of the International Society of Thrombosis and Haemostasis, Boston, MA, July 2009
  12. Clark N, Delate T, **Witt DM**, Parker S, McDuffie R. Anticoagulant Medications in Pregnancy: A Retrospective Evaluation in a Health Maintenance Organization. Anticoagulation Forum, Chicago, IL, May 2007
  11. Clark N, **Witt DM**, Delate T, et al. The Clinical Consequence of Subtherapeutic Anticoagulation: the Low INR Study (LINeRS). Anticoagulation Forum, Chicago, IL, May 2007
  10. Crowther MA, Garcia D, Ageno W, **Witt DM**, et al. Use of Low Dose Oral Vitamin K in the Treatment of Patients with INR Values of More Than 10.0. Annual Meeting of the American Society of Hematology, Atlanta, GA, December 2005
  9. **Witt DM**, Lousberg TR, Tillman DJ, Miller KM. Evaluation of excessive anticoagulation in an established clinical pharmacy anticoagulation service. Anticoagulation Forum, Vancouver, BC, May 1999
  8. **Witt DM**, Lyons E, Beall DG, et al. A controlled retrospective evaluation of a clinical pharmacy anticoagulation service. ACCP Annual Meeting, Nashville, TN, August 1996
  7. Lousberg TR, **Witt DM**, Beall DG, et al. Management of excessive anticoagulation in a group model health maintenance organization. ACCP Annual Meeting, Nashville, TN, August 1996



6. **Witt DM**, Beall DG, Trent D. A calcium channel antagonist target drug program in a group model health maintenance organization. ACCP Annual Meeting, Washington DC, August 1995
5. Anderson L, Breth G, **Witt DM**, et al. Multidisciplinary team approach to the development of nonsteroidal anti-inflammatory drug (NSAID) prescribing guidelines in managed health care. ACCP Winter Forum, Orlando, FL, February 1995
4. **Witt DM**, Medina JE. Enhancing clinical pharmacy services through a chronic refill authorization program. ACCP Annual Meeting, St. Louis, MO, August 1994
3. Black D, **Witt DM**, Witt C. Preliminary study tracking resistance of group A streptococci to erythromycin. ASHP Mid-Year Clinical Meeting, Orlando, FL, December 1992
2. **Witt DM**, DeYoung GR, Ensign RE, et al. Computerized randomization of clinical trials. ASHP Mid-Year Clinical Meeting, Orlando, FL, December 1992
1. **Witt DM**, Kradjan WA, Opheim KE, Wood FJ. Interaction of glipizide with co-trimoxazole. ASHP Mid-Year Clinical Meeting, New Orleans, LA, December 1991

### **RESEARCH IN PROGRESS**

5. Delate T, Clark NP, Jones AE, **Witt DM**. Assessing the Coding Accuracy of Warfarin-Related Bleeding Events
4. Fisher D, Fontaine GV, Delate T, **Witt DM**. Prothrombin complex concentrates vs. fresh frozen plasma for the emergent reversal of warfarin-related intracranial hemorrhage.
3. Feehan M, Munger MA, **Witt DM**, Johnson SA, Fleming R. Patient journeys in venous thromboembolism: A comprehensive model of the drivers of self-reported patient risks and harms in the transition from hospital to home.
2. Nelson R, Bress A, **Witt DM**. Racial differences in oral anticoagulant treatment for stroke prevention in atrial fibrillation (RASP-AF).
1. Cox N, **Witt DM**, Johnson SA, Kaplan D, Vazquez S, Rondina M, Fleming R, Ma J. Descriptive analysis of thrombophilia testing in hospitalized and emergency department patients.

### **GRANTS FUNDED**

8. Co-investigator, "Patient journeys in venous thromboembolism: A comprehensive model of the drivers of self-reported patient risks and harms in the transition from

- hospital to home” (10/15-present, The Joint Commission/Pfizer)
7. Principal investigator, “Risk of Thromboembolism and Recurrent Gastrointestinal Hemorrhage in Patients Restarting and not Restarting Warfarin (ReTREAT)” (8/10-10/12, CSL/Behring)
  6. Principal investigator, “Nonadherence with INR Monitoring and Anticoagulant Complications” (6/10-6/12, ASHP Foundation Junior Investigator Award)
  5. Local principal investigator, Executive Committee member, “Bridging Anticoagulation in Patients Who Require Temporary Interruption of Warfarin Therapy for an Elective Invasive Procedure or Surgery (BRIDGE)” (4/10-8/14, NHLBI/NIH)
  4. Local principal investigator, “Anticoagulation Treatment and Long-Term Outcomes After Venous Thromboembolism” (6/08-Present, NHLBI/NIH)
  3. Co-investigator, “Community-Based Control and Persistence of Warfarin Therapy and Associated Rates and Predictors of Adverse Clinical Events in Atrial Fibrillation and Venous Thromboembolism” (10/07-12/10, NHLBI/NIH)
  2. Co-investigator, “The Clinical Consequence of Subtherapeutic Anticoagulation: the Low INR Study (LINeRS)” (9/06-1/08, ACCP Research Foundation)
  1. Local principal investigator, “Oral Vitamin K for Warfarin Associated Coagulopathy (OVWAC) VI” (11/04-12/07, Health Canada)

### **GRANTS SUBMITTED**

1. Witt DM, Feehan M, Johnson SA, Stevens S, Woller S, Clark NP, Delate T. Patient Outcomes in Extended Management of VTE (POEM-VTE). Patient-Centered Outcomes Research Institute (PCORI). \$6,137,941.

### **MENTORING ACTIVITIES**

#### *Residents mentored:*

1995	Tammy R. Lousberg, PharmD
1997	Rachana J. Patel, PharmD
2000	Tatyana V. Plotkin, PharmD
2001	Jung Chuang, PharmD, Roberta Shanahan, PharmD
2004	Samuel G. Johnson, PharmD, Kandace V. Anich, PharmD
2006	Jared R. Jones, PharmD, Todd R. Eddy, PharmD
2007	Kristina Rogers, PharmD, Melissa Trapp, PharmD

- 2008 Suzie Parker, PharmD, Kerri D. Martinez, PharmD, Erika D. Wilson, PharmD
- 2009 Dwight C. Paulson, PharmD, Kelli A. Vavra, PharmD, Stephanie E. Cho, PharmD
- 2010 Brandon J. Simmons, PharmD, Kathleen M. Jenner, PharmD
- 2011 Catherine Riggs, PharmD
- 2012 Loren Davies, PharmD
- 2013 Melissa Meyer, PharmD, Eddie Saito, PharmD
- 2015 Nicholas W. Cox, PharmD, Daniel Fischer, PharmD

*Fellows mentored:*

- 2011 Adriane N. Irwin, PharmD, MS, BACP
- 2012 Yardlee S. Kauffman, PharmD, MPH, BACP
- 2013 Allison Schroeder, PharmD

*Pharmacy Undergraduate Research Fellowship students mentored:*

- 2015 Ryan Nelson, PharmD candidate

*Department of Pharmacotherapy PhD students mentored:*

- 2015 Mukul Singhal, PhD candidate (Thesis Committee Member),  
Marissa Schauerhammer, PhD candidate (Thesis Committee Member)

*Pharmacy Student seminar topics mentored:*

- 2016 Tyler Laursen (Antithrombin for ECMO)
- 2015 David Sze (Anti-factor Xa Monitoring of Unfractionated Heparin),  
Karen White (Bridge therapy for Atrial Fibrillation), Whitney Irvine  
(Hyperhomocysteinemia)

**AWARDS AND HONORS**

- 2016 Clinical Practice Award, American College of Clinical Pharmacy
- 2015 Distinguished Alumnus Award, Snow College Alumni Association
- 2014 Dean L. David and Janet C. Hiner Distinguished Alumnus Award,  
University of Utah College of Pharmacy Alumni Association
- 2014 Spirit of CARE Project of the Year, Novel Oral Anticoagulants  
Workgroup, Kaiser Permanente Colorado Region

- 2013 ASHP Foundation Literature Award, Drug Therapy Research (**Witt DM**, Delate T, Garcia DA, Clark NP, Hylek EM, Ageno W, Dentali F, Crowther MA. Risk of Thromboembolism, Recurrent Hemorrhage, and Death After Warfarin Therapy Interruption for Gastrointestinal Tract Bleeding. *Archives of Internal Medicine* 2012;172:1484-1491)
- 2013 Broom Seminarian, University of Utah (Invited lecture to University of Utah School of Pharmacy Faculty and Students)
- 2005 ASHP Foundation Literature Award, Pharmacy Practice Research (**Witt DM**, Sadler MA, Shanahan R, Mazzoli G, Tillman TJ. Effect of a centralized clinical pharmacy anticoagulation service on the outcomes of anticoagulation therapy. *CHEST* 2005;127:1515-1522)
- 2004 Fellow, American College of Clinical Pharmacy
- 2004 Summit Award Nominee, Kaiser Permanente, Colorado Region
- 2003 David H. Lawrence Patient Safety Award Runner Up, Clinical Pharmacy Anticoagulation Service, Kaiser Permanente National
- 2003 RxCELLENCE Award, Kaiser Permanente Colorado Region
- 2002 James A. Vohs Award for Quality Nominee, Clinical Pharmacy Cardiac Risk Service, Kaiser Permanente National
- 2001 CARE Project of the Year Finalist, Clinical Pharmacy Cardiac Risk Service, Kaiser Permanente Colorado Region
- 2001 Patient Safety Award, Ambulatory Health Care, Clinical Pharmacy Anticoagulation Service, Presented by the Colorado Coalition of Patient Safety
- 2000 CARE Project of the Year, Clinical Pharmacy Anticoagulation Service, Kaiser Permanente Colorado Region
- 1999 James A. Vohs Award for Quality Honorable Mention, Clinical Pharmacy Anticoagulation Service, Kaiser Permanente National
- 1998 CARE Project of the Year Award Finalist, Medication Allergy Documentation Program, Kaiser Permanente Colorado Region
- 1997-98, 2001 RxCELLENCE Award Nominee, Kaiser Permanente Colorado Region
- 1995 Summit Award Nominee, Kaiser Permanente Colorado Region
- 1994 RxCELLENCE Award, Kaiser Permanente Colorado Region

- 1990 Lilly and Lemmon Award, Highest Scholastic Achievement, University of Utah
- 1989 Rho Chi Honor Society, University of Utah
- 1988 Ewart P. Swinyard Honors Scholarship, University of Utah
- 1987, 89 Continuing Student Departmental Scholarships, University of Utah

### **APPOINTMENTS**

- 2016-Present Member, Medical & Scientific Advisory Board, National Blood Clot Alliance
- 2016-Present Editorial Board Member, Pharmacotherapy
- 2015 The Netherlands Organization for Health Research and Development, Expert Review of Health Care Research Proposal (Optimal dosing of Prothrombin Complex Concentrate, the antidote for bleeding complications in users of Vitamin K Antagonist anticoagulants)
- 2015 Thrombosis and Hemostasis Societies of North America (THSNA) Mentored Research Award—Grant Review Panel Member
- 2014 Panel Member, ASHP Foundation 2014 Literature Awards—Drug Therapy Research Award
- 2014 Executive Committee member, BRIDGE Study
- 2013-Present Planning Committee, Pharmacy Invitational Conference on Antithrombotic Therapy
- 2009-Present Member, Anticoagulation Forum Board of Directors
- 2009 Panel Member, Antithrombotic and Thrombolytic Therapy: American College of Chest Physicians Evidence-based Clinical Practice Guidelines, 9th Edition
- 2009-12 Elected Member, ACCP Research Institute Board of Trustees
- 1999 Editorial Board Member, Pharmacotherapy Self-Assessment Program, 4<sup>th</sup> Ed
- 1996 Pharmacotherapy Exam Preparatory Course, ACCP, Planning Committee

### **PEER REVIEW**

- 1996 Asthma Chapter, Pharmacotherapy Self-Assessment Program, 2<sup>nd</sup> Ed

1997	Thrombosis Chapter, Pharmacotherapy Self-Assessment Program, 3 <sup>rd</sup> Ed
2002	Blood Coagulation Disorders Chapter, Pharmacotherapy Self-Assessment Program, 4 <sup>th</sup> Ed
2005	Thrombosis Chapter, Pharmacotherapy Self-Assessment Program, 5 <sup>th</sup> Ed
2005-Present	JAMA
2005-Present	Journal of Thrombosis and Thrombolysis
2006-Present	CHEST
2006-Present	Thrombosis Journal
2007-Present	Journal of the Canadian Medical Association
2008-Present	Annals of Internal Medicine (Rated by editor in top 30% of reviewers 2008, received top grade from editors in 2012)
2008-Present	Pharmacotherapy
2008	Venous Thromboembolism Prevention and Treatment: Evidence Based Updates Chapter, Pharmacotherapy Self-Assessment Program, 7 <sup>th</sup> Ed
2009-Present	Journal of Thrombosis and Haemostasis
2010-Present	Age and Aging
2010-Present	Thrombosis Research
2010-Present	Thrombosis and Haemostasis
2011-Present	Pharmacy Practice
2011-Present	American Journal of Cardiovascular Drugs
2011-Present	Current Medical Research & Opinion
2011-Present	American Journal of Medicine
2011-Present	Pharmacogenomics
2012-Present	Journal of General Internal Medicine
2012-Present	JAMA Internal Medicine (formerly Archives of Internal Medicine)

2012-Present	Computer Methods and Programs in Biomedicine
2012-Present	Pharmaceutics
2012	American Society of Hematology Abstract Review Panelist (Thrombosis)
2013-Present	Journal of Nutrition, Health, and Aging
2014-Present	Clinical and Applied Thrombosis/Hemostasis
2014-Present	American Journal of Managed Care
2014-Present	American Journal of Health-Systems Pharmacy
2015-Present	Blood
2015-Present	European Neurology
2015-Present	American Journal of Cardiology
2016	Bleeding Disorders Chapter, Drug-Induced Diseases: Prevention, Detection and Management, 3 <sup>rd</sup> Ed
2016-Present	The Patient: Patient–Centered Outcomes Research

### **TEACHING RESPONSIBILITIES**

2016	Coursemaster PHARM 7151, Recitation, University of Utah College of Pharmacy (1-semester hour course consisting of active learning sessions that challenge students to integrate knowledge and skills taught across the courses in the spring of the P1 year. The course serves as a blueprint to improve knowledge, understanding and comprehension of course material, while also facilitating an empathetic and holistic approach to patient-centered pharmaceutical care. Areas of emphasis include development of students' leadership style, communication skills, and research methodology)
2015	Facilitator, MS2018, Circulation Respiration & Regulation (CRR) Case Based Learning, University of Utah School of Medicine (small group, active learning sessions that challenge medical students to integrate knowledge and skills taught across CRR courses in the fall of the MS2 year)
2015	Lecturer, PCTH 7140, Foundations of Patient-Centered Care, University of Utah College of Pharmacy (What is Professionalism?)

- 2015-Present      Lecturer, PCTH 5222, Diseases and Drug Therapy I, University of Utah College of Pharmacy (Thrombosis Module)
- 2015                Coursemaster PHARM 7150, Recitation, University of Utah College of Pharmacy (1-semester hour course consisting of active learning sessions that challenge students to integrate knowledge and skills taught across the courses in the fall of the P1 year. The course serves as a blueprint to improve knowledge, understanding and comprehension of course material, while also facilitating an empathetic and holistic approach to patient-centered pharmaceutical care. Areas of emphasis include development of students' professionalism and accountability to their patients, including professional communication skills and evidence-based approaches to pharmaceutical care)
- 2001-10            Lecturer, School of Pharmacy, School of Pharmacy, University of Colorado (Overview of Anticoagulation Therapy Practice)
- 2000                Instructor, Non-traditional Pharm.D. Program, School of Pharmacy, University of Colorado (Acute Anticoagulation, Excessive Anticoagulation)
- 1999                Lecturer, PHPR 4600, Pharmacotherapeutics, School of Pharmacy, University of Colorado (Stroke)
- 1996-97            Lecturer, PHPR 4610, Pharmacotherapeutics I, School of Pharmacy, University of Colorado (Oral Contraceptives)
- 1995-96            Lecturer, PROD 5620, Advanced Pharmacotherapeutics and Pharmacokinetics III, School of Pharmacy, University of Colorado (Menopause, Osteoporosis, Oral Contraceptives, Dysfunctional Uterine Bleeding, Hypothyroidism)
- 1994                Lecturer, PHSC 4740, Toxicology, School of Pharmacy, University of Colorado (Clinical Toxicology)
- 1994                Pharmacy Inservice, University of Washington and Harborview Medical Centers (Incorporating Clinical Pharmacy with Target Drug Programs)
- 1993-94            Pharmacy Inservice, Kaiser Permanente (Asthma, COPD and MDI Technique, Estrogen Replacement Therapy, Oral Contraceptives)
- 1993-94            RN/LPN Inservice, Internal Medicine, Kaiser Permanente (Hypertension, Hypothyroidism, Migraine Headache, Epoetin Alfa)
- 1993                Lecturer, Pharmacy 415, School of Nursing, University of Washington (Estrogen and Progesterone)



- 1993                   Lecturer, Medex Northwest, Physicians Assistant Therapeutics Curriculum (Bronchodilators, Antibiotics, Antihypertensives, Selected Women's Health Issues, Angina, Congestive Heart Failure)
- 1992                   Lecturer, Pharm 301, Pharmacy for Non-Majors, School of Pharmacy, University of Washington
- 1992-93               Lecturer, Pharm 484, 485, Clinical Pharmacy, School of Pharmacy, University of Washington (Headache Disorders, Otitis Media)

### **CONTINUING EDUCATION/PRESENTATIONS**

- 2016                   Medscape Webinar (Improving Quality of Anticoagulation Management Using Point-of-Care Testing), available at <http://www.medscape.org/viewarticle/862167>
- 2016                   Utah Academy of Family Physicians CME-n-Ski Conference (What to Do After the Bleed: Anticoagulant-Associated Bleeding), Snowbird Resort, UT
- 2015                   University of Utah College of Pharmacy (Current Issues in Anticoagulation Therapy Management), Salt Lake City, UT
- 2015                   Utah Pharmacy Association, Annual Meeting (Anticoagulation Therapy Update), St. George, UT
- 2015                   13<sup>th</sup> National Conference on Anticoagulant Therapy (Master Class—Resuming Anticoagulation After a Bleed), Washington, DC
- 2014                   29th Pharmacy Invitational Conference on Antithrombotic Therapy (Interpretation of a Hypercoagulation Workup), Anaheim, CA
- 2014                   Grand Rounds (Venous Thromboembolism), St. Anthony's Hospital, Thornton, CO
- 2014                   Thrombosis & Hemostasis Summit of North America (Anticoagulant-Associated Bleeding: What to Do After the Bleed?), Chicago, IL
- 2014-16               Anticoagulation Boot Camp, Anticoagulation Forum (Basics of Hemostasis, Quality Improvement and Benchmarking), Miami, FL (January 2014), Seattle, WA (October 2014), Boston, MA (July 2015), Salt Lake City (January 2016), Albuquerque, NM (October 2016)
- 2013                   Broom Seminarian Lecture, University of Utah Skaggs School of Pharmacy and Pharmaceutical Sciences (Why Would Anyone Want to Work in an Anticoagulation Service?), Salt Lake City, UT

- 2013 12<sup>th</sup> National Conference on Anticoagulant Therapy (Difficult Cases Panel), Phoenix, AZ
- 2013 Iowa Hospital Association Hospital Engagement Network Learning Communities Readmissions and Hospital Acquired Conditions Program (Preventing Anticoagulation Therapy Adverse Events), Des Moines, IA
- 2012 27<sup>th</sup> Pharmacy Invitational Conference on Antithrombotic Therapy (AT9 Chapter on Evidence Based Management of Anticoagulant Therapy: An Insider's View of Guideline Development), Las Vegas, NV
- 2012 Thrombosis and Hemostasis Summit of North America 2012 (ACCP Guidelines Panel Discussion), Chicago, IL
- 2012 Western Regional Thrombosis Symposium 2012 (Evidence-based Management of Vitamin K Antagonists), Salt Lake City, UT
- 2012 Mid-year Clinical Meeting, America Society of Health-System Pharmacists (Optimal Management of New Oral Anticoagulants During Transitions Between the Inpatient and Outpatient Settings), Las Vegas, NV
- 2011 26<sup>th</sup> Pharmacy Invitational Conference on Antithrombotic Therapy (Strategies for Improving Time in Therapeutic Range), New Orleans, LA
- 2011 American Heart Association Scientific Sessions 2011 (Anticoagulation: Preventing Bleeding While Preventing Stroke), Orlando, FL
- 2011 Esoterix Laboratory Services, Inc. 13<sup>th</sup> Annual Symposium on Bleeding & Thrombosis (Opimization of Warfarin Therapy & Quality Improvement in Patients on Warfarin), Denver, CO
- 2011 Dawn AC® 5<sup>th</sup> Annual North American User Group Meeting (Kaiser Permanente Experience with New Anticoagulants), Palm Springs, CA
- 2011 Anticoagulation Forum 11<sup>th</sup> National Conference on Anticoagulant Therapy (Quality Measures and Benchmarking for VKA Therapy), Boston, MA
- 2010 National Teleconference Presentation for Anticoagulation Forum (What is the Optimal INR Recall Interval)

- 2010 Dawn AC® 4<sup>th</sup> Annual North American User Group Meeting (Research Supporting Warfarin Improvement), Los Angeles, CA
- 2010 American Society of Consultant Pharmacists Annual Meeting (Optimizing Oral Anticoagulation Therapy), Phoenix, AZ
- 2009 Dawn AC® 3<sup>rd</sup> Annual North American User Group Meeting (Using Dawn AC and Lean Six Sigma to Improve Productivity), Boston, MA
- 2008 4<sup>th</sup> Annual McMaster Thromboembolism Update (Making Anticoagulation Work in the Real World), Hamilton, ON
- 2008 Exempla Good Samaritan Hospital (Excessive Anticoagulation), Lafayette, CO
- 2008 Dawn AC® 2<sup>nd</sup> Annual North American User Group Meeting (Using Dawn AC to Support Research and Quality Improvement Activities), Albuquerque, NM
- 2007 7<sup>th</sup> Annual Southwest Symposium on Thrombosis and Hemostasis/3<sup>rd</sup> Annual McMaster Thromboembolism Update (The Kaiser Permanente Anticoagulation Service: A Model for Modern Anticoagulation Therapy), Denver, CO
- 2006 Dawn AC® 13<sup>th</sup> Annual User Group Meeting (Clinical Pharmacy Anticoagulation Services), Cumbria, UK
- 2004 Mid-year Clinical Meeting, American Society of Health-System Pharmacists (Outpatient Treatment of DVT), Orlando, FL
- 2004 1st Annual Mid-Atlantic Antithrombotic Therapy Symposium, University of Maryland (Treatment of Venous Thromboembolism, Outpatient Management of DVT), Baltimore, MD
- 2003 Kaiser Permanente Northwest Region, (Update in Anticoagulation Therapy), Portland, OR
- 2001 Colorado Coalition on Patient Safety (Impact of a Clinical Pharmacy Anticoagulation Service on Patient Safety), Denver, CO
- 2001 Dawn AC® 9<sup>th</sup> Annual Users Group Meeting (Anticoagulation Services at Kaiser Permanente), Cumbria, UK
- 2000 American College of Physicians Meeting (Excessive Anticoagulation), Colorado Springs, CO
- 2000 American College of Clinical Pharmacy Spring Meeting (Telepharmacy), Salt Lake City, UT

- 1999 Colorado Foundation for Medical Care, Preventing Medication Errors (Panel Discussion), Denver, CO
- 1998 13th Pharmacy Invitational Symposium on Antithrombotic Therapy (New Data for Maintenance Warfarin Therapy), Las Vegas, NV
- 1998 Canadian Society of Hospital Pharmacists (Biostatistics), Toronto, Ontario
- 1997 University of Colorado Winter Program (Establishing an Anticoagulation Service), Steamboat Springs, CO
- 1995-2004 Pharmacotherapy Exam Preparatory Course, ACCP (Biostatistics: A Refresher, Clinical Trial Design and Biostatistical Applications, Biostatistics Workshop), Orlando, FL, Dallas, TX, Nashville, TN, Minneapolis, MN, Panama City, FL, Palm Springs, CA, Austin, TX
- 1995 Colorado Academy of Physician Assistants (Cost-Conscious Prescribing), Copper Mountain, CO
- 1994 National Council on Patient Information and Education conference "Advancing Prescription Medicine Compliance: New Paradigms, New Practices" (Advancing Prescription Medicine Compliance in Managed Care Settings), Washington, DC
- 1994 Oregon Society of Hospital Pharmacists (Incorporating Clinical Pharmacy with Target Drug Programs), Portland, OR
- 1993-2003 Kaiser Permanente Continuing Education for Pharmacists Programs (Calcium Channel Blockers, Cost Effective Prescribing, Asthma, NSAIDs, Drug Use in Pregnancy and Lactation, Biostatistics, Asthma/COPD, Hormone Replacement Therapy, Treatment of DVT, Interpreting Laboratory Data, Warfarin Drug Interactions, Treatment of Stroke, Update on Anticoagulation Therapy), Denver, CO
- 1993-94 Washington State Naturopathic Physicians (Review of Pharmacology, Common Drug Problems, Clinical Use of Approved Legend Substances), Silverdale, WA, Seattle, WA
- 1992 Advances in Family Practice, University of Washington, School of Medicine (Antibiotic Update), Seattle, WA
- 1990-92 University of Washington, School of Pharmacy (Pharmacist Management of Chronic Disease, Ganglionic Blocking Agents, Diabetes Mellitus, Patient Counseling), Seattle, WA

## **PROFESSIONAL SERVICE**

- 2014-Present Executive Committee, University of Utah College of Pharmacy
- 2014-Present Professional Education Program Advisory Committee, University of Utah College of Pharmacy
- 2015-Present Admissions Committee, University of Utah College of Pharmacy
- 2015-Present Clinical Research Oversight Committee, University of Utah Health Sciences Campus
- 2016-Present College of Pharmacy Liaison to the Community Faculty Office, University of Utah Health Sciences Campus

**COMMUNITY SERVICE**

- 2015-Present Assistant Varsity Scout Coach—Boy Scouts of America, Team 408, Kaysville, UT
- 2013-14 Team Manager/Treasurer, Colorado Storm North Royal Boys Soccer Team, Thornton, CO
- 2013 Flood relief effort volunteer, Longmont, CO
- 2009-13 Bicycle Longmont—Annual bike give-a-way volunteer, Longmont, CO
- 2007-13 Scoutmaster—Boy Scouts of America, Troop 560, Longmont, CO
- 2003-06 Bishop—Church of Jesus Christ of Latter Day Saints, Longmont 2<sup>nd</sup> Ward
- 1985-86 Missionary—Church of Jesus Christ of Latter Day Saints, Canada Halifax Mission