

CURRICULUM VITAE



Ronald A. Herman

Professor (Clinical)
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I. EDUCATIONAL AND PROFESSIONAL HISTORY

A. Higher Education

<u>Institution</u>	<u>Major</u>	<u>Dates Attended</u>	<u>Degree</u>	<u>Date Awarded</u> (Mo./Yr.)
University of Iowa	Pharmacokinetics	1985-1992	Ph.D.	5/92
University of Iowa	Clinical Pharmacy	1976-1978	M.Sc.	7/78
University of Iowa	Pharmacy	1971-1976	B.Sc.	5/76
Pharmacy Residency Certificate	Iowa City Veterans Administration Hospital			7/77-6/78
Pharmacy Practice License	Iowa Board of Pharmacy			6/76 - Present

B. Professional and Academic Positions

<u>Title of Position</u>	<u>Institution</u>	<u>Dates of Service</u>
Professor (Clinical)	University of Iowa College of Pharmacy	7/10 - Present
Clinical Pharmacy Specialist	University of Iowa Hospitals & Clinics	2/14 – Present
Director	Iowa Drug Information Network	7/01 – 7/13
Associate Professor (Clinical)	University of Iowa College of Pharmacy	7/04 – 6/10
Assistant Professor (Clinical)	University of Iowa College of Pharmacy	7/01 – 7/04
Assistant Professor	University of Iowa College of Pharmacy	7/94 – 7/01
Clinical Pharmacist	University of Iowa Hospitals & Clinics	7/92-6/94
Part-time Pharmacist	Veteran's Administration Hospital Pharmacy	8/85-6/92
Adjunct Clinical Faculty	University of Iowa College of Pharmacy	1-5/90 & 1-5/91
Teaching Assistant	University of Iowa College of Pharmacy	1/85-5/89
Consulting Pharmacist	Dept. Health & Social Welfare, South Africa	1/79-12/84

C. Honors, Awards, Recognitions, Outstanding Achievements

2017 Appointed by the Iowa Department of Public Health to the review panel responsible for the selection the two possible manufacturers for medical cannabidiol in the state of Iowa.

- 2016 Appointed Chair Pharmacokinetics & Pharmacodynamics Panel of the Annals of Pharmacotherapy Editorial Board
- 2012 Appointed Executive Director of Christian Pharmacists Fellowship International
- 2011 USP Award for Innovative Response to Public Health Challenges
- 2010 Served on the University of Iowa Faculty Engagement Corps
- 2009 Interviewed by Iowa Public Radio for Service to Underserved Populations
- 2009 Honored by being highlighted on the University of Iowa Be Remarkable Webpage
- 2005 Faculty Delegate to the House of Delegates, Am. Assoc. of Colleges of Pharmacy
- 2005 Certificate of Appreciation for Generous Service, AAPS Visiting Scientist Program
- 2005 Re-elected to University of Iowa Faculty Senate
- 2003 Appointed Chair Bioinformatics Panel of the Annals of Pharmacotherapy Editorial Board
- 2002 Elected to the University of Iowa Faculty Council
- 2002 Elected to the University of Iowa Faculty Senate
- 2000 Dr. Warren E. Weaver Service Award for service to others.
- 1996 New Investigator Award, Am. Assoc. of Colleges of Pharmacy
- 1986 The Abbott Laboratories Teaching Assistant Fellowship 1986/1987
- 1978 Membership Induction to Rho Chi Society, the Pharmacy Honor Society

D. Publications and Other Creative Works: (see Appendix A)

Publications: 40

E. Presentations: (see Appendix B)

National and international research presentations:	42
National and international invited presentations:	49
Local invited presentations and other contributions:	85

II. Teaching:

I provide 21 contact hours delivering traditional classroom content to the PharmD students in this Professional Discovery I and in 5 of the Integrated Pharmacotherapy series courses. In addition, in these courses I provide about 47 hours of active learning supervision. My clinical teaching involves 2 advanced pharmacy practice experience (APPE) students in drug information and institutional review board activities each year for a 5 week rotation. In addition, I provide 20 introductory practice experience students with a 6 hour exposure to institutional review board activities. I typically take 1 or 2 students on a global APPE in a developing country each year.

Outside of the College of Pharmacy each year I provide a 3 hour lecture on *Introductory Pharmacokinetics* to physician assistant students at St. Ambrose University. Also, each year I provide a 1 hour remotely delivered lecture to students at University of the Incarnate Word School of Pharmacy, San Antonio, TX on *Establishing Best Practices for Pharmacists on Short Term Mission Trips*.

III. Major Areas of Research Interest:

During my doctoral program I was involved in a number of projects where I learned skills necessary to use a two stage approach to descriptive pharmacokinetics. I looked at the pharmacokinetics of gold in breast milk, the pharmacokinetics of low-dose methotrexate and at an interaction between methotrexate, sulindac and aspirin. Then utilizing structure activity relationships I used a traditional statistical approach to predict pharmacokinetics of various drugs from their physicochemical characteristics. Towards the end of the training I learned to use a neural network for its ability to identify patterns and make predictions.

During my service in the Burn Treatment Center I had numerous opportunities to investigate altered pharmacokinetics in the hypermetabolic burn population. Collaborations with other faculty members has allowed me to assist in the pharmacokinetic analysis of other problems with cyclosporine in transplant patients and creatinine clearance in HIV patients. I developed these research collaborations as a result of the pharmacokinetic/pharmacodynamic computational lab that I operated at that time. My research focus was in evaluating various computational tools to forecast pharmacokinetic or pharmacodynamic responses.

Now my research activities have begun to focus on utilizing technology to facilitate the delivery of pharmaceutical care. I am interested in the development and promotion of tools to deliver drug information and pharmaceutical care at the point where care is delivered. I also am committed to provide opportunities for students to be exposed to the delivery of pharmaceutical care in underdeveloped areas. Lastly, I have become involved with ensuring high standards with the development and implementation of the current Iowa medical cannabis legislation.

IV. Clinical Service:

Clinical Pharmacy Specialist, Drug Information Center, University of Iowa Hospitals & Clinics, Investigational Review Board Pharmacist

I am involved in helping students discover the skills and knowledge they need to become future pharmacy practitioners and researchers. A major focus of my efforts is to expose these mentees to the role of safe medical research through the review and approval of all proposed research that involves medications being used in humans. I conduct a pharmacist review on behalf of the Pharmacy & Therapeutics Committee for all research that will be conducted at the UIHC that will involve medications being used in human subjects. Students and residents are exposed to the research process from the design and safety perspective and how this might impact pharmacy.

I review, on the average, 18 new research protocols each month (range 9-31 per month). I spend about 2 hours on each review (range 1-4 hours), with the shorter ones having been first reviewed by the Holden Comprehensive Cancer Center. I no longer participate in the Institutional Review Board (IRB) meetings that approve all research projects that will involve human subjects. In addition, I review and approve approximately 29 IRB research proposals per month that require a modification. This is a 9% increase in the number of new protocols reviewed each month since last year and a 28% increase since starting in 2014. It represents an increase of 19% for the modifications that are done each month compared to last year and an 80% increase since starting in 2014. The goal is to provide these consultative services and develop a clerkship experience that will generate interest and skills for students who will pursue research in their future residency or faculty appointments.

A portion of my time is also spent providing back-up coverage in the hospital drug information center when the current staff member is on leave or is away from the center on other business. There is also regular interaction with the residents that provide DI and MUE services. I provide an advanced practice experience in an underserved country one rotation cycle per year. I have taken students to Ethiopia, Kenya, Nicaragua and Belize in past years. I have not been able to take students for the past 3 years, but I hope to resume that activity this year.

V. Professional Service:

<i>Agency or Organization</i>	<i>Nature of Service</i>	<i>Date(s)</i>
Christian Pharmacists Fellowship Int'l	Executive Director	2012 - Present
Christian Pharmacists Fellowship Int'l	President	2009 - 2012
Am. Assoc. of Pharmaceutical Scientists	Abstract reviewer for the Clinical Pharmacology & Translation Research section for the Annual Meeting	2008 - 2009
Am. Assoc. of Pharmaceutical Scientists	Helped Select the Research Achievement Award winner for Clinical Pharmacology and Translational Science	2007
Annals of Pharmacotherapy	Editorial Board – Chair Pharmacokinetics & Pharmacodynamics (PK/PD) panel	2016-2017
Annals of Pharmacotherapy	Editorial Board – Member PK/PD panel	2013-2015
Annals of Pharmacotherapy	Editorial Board – Member Medical Informatics panel	2007-2013
Am. Assoc. of Colleges of Pharmacy	Faculty Delegate to the House of Delegates	2005
World of Drug Information	Review Manuscripts	2002-2013
Am. Assoc. of Pharmaceutical Scientists	Chair of the Clinical Sciences Section	2001 & 2003
Am. Assoc. of Pharmaceutical Scientists	Moderator at 3 Clinical Science Symposia	2000
Am. Assoc. of Pharmaceutical Scientists	Member Program Coordination Committee	2000-2001
Am. Assoc. of Pharmaceutical Scientists	Chair-Elect, then Vice-Chair, Clinical Sciences Section	1999-2000
Am. Assoc. of Pharmaceutical Scientists	Paper Screener for 1998 Annual Meeting	1998
Am. Assoc. of Pharmaceutical Scientists	Moderator of the Clinical Sciences Podium Session	1998
Global Health Outreach	Advisory Council Member representing Pharmacy	1997 - Present
Annals of Pharmacotherapy	Review Journal Articles	1996 - Present
Christian Pharmacists Fellowship Int'l	Board of Directors	1995 - 2008

VI. Other Service (International Focus)

- 2019 Participated in a two week humanitarian mission to Tanzania. The team of 27 doctors and other healthcare professionals spent two weeks in Mogororo Tanzania. The 3 doctors, 1 physician assistant, 1 nurse practitioner, 4 nurses, 3 pharmacists, 2 students, 5 dentists, a dental hygienist, a physical therapist and 6 support people saw 1,850 patients and we filled over 2,100 prescriptions.
- 2015 Participated in a two week humanitarian mission to Ethiopia. The team of 14 doctors and other healthcare professionals spent two weeks in southern Ethiopia. The 2 doctors, 2 physician assistants, 3 nurses, 2 pharmacists, 2 pharmacy students, a dental hygienist and 3 support people saw almost 1,750 patients and we filled over 3,500 prescriptions.
- 2014 Participated in a two week humanitarian mission to Kenya. The team of 17 doctors and other healthcare professionals spent the first week in Nakuru, in southwestern Kenya. The second week was spent in Nairobi at a clinic based in a school operated by the Kenya Children's Fund. The 4 doctors, 2 nurses, 1 student nurse, 4 pharmacists, an optometrist, a speech therapist, an occupational therapist and 3 support people saw almost 1,800 patients and we filled over 3,500 prescriptions.
- 2013 Participated in a 1 week humanitarian mission to Lebanon. The team of 13 doctors and other healthcare professionals spent five days providing simple primary health care to Syrian refugees that had settled near Beirut. The 4 doctors, 3 dentists, 1 dental assistant, 2 two nurses, 4 pharmacists and 2 support staff saw 635 medical and 165 dental patients and we filled 1,600 prescriptions.
- 2012 Participated in a two week humanitarian mission to Kenya. The team of 30 doctors and other healthcare professionals spent the first week in Namanga, near the Tanzania border. The second week was spent in Nairobi at a clinic based in a school operated by the Kenya Children's Fund. The 3 doctors, 2 physician assistants, 2 medical students, a nurse practitioner, 4 nurses, 5 dental staff, 3 pharmacists, 1 pharmacy student and 9 support people saw just over 2,225 patients and we filled over 4,600 prescriptions.

- 2011 Provided 12 weeks of customized training at DDIS for Abdullah S. Ameen from the Kuwait Oil Company Ahmadi Hospital. The training focused on basic skills of providing drug information, pharmacy and therapeutics committee support, medication use evaluation and drug policy support and how to set up and operate a drug information center. The training equipped him to finalize a proposal and establish a new drug information center in the Ahmadi Hospital.
- 2011 Provided one week of customized training at DDIS for Prisca Anamelechi from Georgetown University. The training focused on basic skills of providing drug information, pharmacy and therapeutics committee support, medication use evaluation and drug policy support. The training equipped her for support services for medication use evaluation and the hospital formulary support.
- 2011 Participated in a two week humanitarian mission to Kenya. The team of 33 doctors and other healthcare professionals spent the first week in Namanga, near the Tanzania border. The second week was spent in Nairobi at a clinic based in a school operated by the Kenya Children's Fund. The 6 doctors, 5 nurses, 3 dentists, 2 pharmacists, 5 pharmacy students and 11 support people saw just over 3,700 patients and we filled nearly 7,700 prescriptions.
- 2010 Provided an 8 week specialized drug information training program at the Iowa Drug Information Network (IDIN) for Nada Al-Agil, a Clinical Pharmacist and Director of the Drug Information Center at King Fahad Medical City in Riyadh, Saudi Arabia. She spent 6 weeks at IDIN getting both didactic and hands on training in processing drug information requests and in evaluating and interpreting the medical literature under my supervision. She then spent an additional two weeks at the Iowa Statewide Poison Control Center with the directors Linda Kalin, RN and Ed Bottei, MD.
- 2009 Interviewed by Iowa Public Radio for Service to Underserved Populations
- 2009 Highlighted on the University of Iowa Be Remarkable Webpage
- 2008 Participated in a two week humanitarian mission to Kenya. The team of 30 doctors and other healthcare professionals spent the first week in Kibera, the largest slum in Africa. Approximately 1.4 million people live in this area. The second week was also spent in Nairobi, but this clinic was provided in a school operated by the Kenya Children's fund. The 5 doctors, 7 nurses, 3 dentists, 3 pharmacists, and 11 support people saw just over 3,000 patients and we filled nearly 6,000 prescriptions.
- 2008 Provided two weeks of training at DDIS to Mohammed Barasain and Omar Al Burikan from the Saudi Food and Drug Authority. They will be operating the National Drug and Poison Information Center in Saudi Arabia.
- 2008 Participated in a one week humanitarian mission to Nicaragua. The team consisted of 7 physicians, 6 dentists, 4 nurses, 1 physician assistant, 1 psychologist, 1 registered dietitian, 7 logistics/non-health care professionals, myself and two pharmacy students who received clerkship credit for this international experience. We provided medical services to 2,900 patients in La Trinidad, a mountain village about two hours from the capital of Managua. Most patients came to the clinic which was set up in a school, but the students each had the opportunity to make house calls to several individuals who were not able to travel.
- 2006 Participated in a two week humanitarian mission to Afghanistan. The team of 14 doctors and other health professionals provided medical services in several remote villages in the mountains near Kabul. One day was spent at an orphanage, and three days were devoted to lecturing and clinical teaching at CURE International Hospital in Kabul.
- 2005 Provided two weeks of training at the General Authority for Health Services in Abu Dhabi, United Arab Emirates. Provided a training session for about 70 pharmacists on how to use the IDIS Database and then provided detailed training to 10 individuals on how to operate a drug and poison information center. From these 10 trainees, three were chosen to start the National Drug and Poison Information Center for the Emirate of Abu Dhabi.
- 2004 Provided one week of training in Gaborone, Botswana. I trained Joyce Kgatlwane, PharmD, the

Director of the Botswana Drug and Toxicology Information Center and two of her colleagues.

- 2004 Participated in a two week humanitarian mission to Ethiopia. The team of 21 doctors and other health professionals provided medical services in an understaffed medical center for 10 days. They also spent one day providing medical and dental care at a prison. The team saw 2879 patients and provided 5440 courses of medications for those patients.
- 2003 Provided four weeks of training at DDIS to Philip Anum, Head of the National Drug Information Resource Center in Ghana.
- 2002 Participated in a two week humanitarian mission to Zambia. The team of 17 doctors and other health professionals provided medical services in an understaffed medical center for 6 days. They also spent one day providing medical and dental care in an orphanage and another day was spent at a prison. The team saw 2076 patients and provided 4107 courses of medications for those patients.
- 1998 Participated in a one week humanitarian mission that took a medical and building team into Mexico. Dr. Herman led the medical team of 1 physician, 2 pharmacists, 6 nurses and several helpers. They visited 5 rural villages near Reynosa, Mexico providing badly needed primary medical care.
- 1997 Participated in a humanitarian mission that took a medical team into the prisons in Zambia. The team of 17 doctors and other health care professionals treated a daily average of 433 prisoners in 8 different prisons. Dentists treated 378 patients, and physicians treated 3,090 patients. Dr. Herman and another pharmacy colleague from Indiana and a social worker from Ohio dispensed 7,000 prescriptions in 2 weeks (an estimated \$18,000 of donated medicines).
- 1996 Participated in a humanitarian mission that took a medical team into the prisons in Zambia. The team of 20 doctors and other health care professionals treated a daily average of 437 prisoners in 7 different prisons. Dentists treated 742 patients, and physicians treated 2,765 patients. Dr. Herman and another pharmacy professor colleague from North Carolina and a physical therapist from Georgia dispensed 6,200 prescriptions in 2 weeks (an estimated \$20,000 of donated medicines).

Appendix A

Publications and Other Creative Works.

BOOKS, BOOK CHAPTERS:

Books (Thesis)

1. Herman RA: Drug distribution kinetics related to physicochemical characteristics. *Ph.D. Dissertation*, University of Iowa, Iowa City, IA, 1992.
2. Herman RA: Development of a computer-assisted medical record audit (CAMRA): A new approach to drug utilization review. *M.Sc. Thesis*, University of Iowa, Iowa City, IA, 1978.

Book Chapters

1. Thomas D, Costa de Souza I, Woods D, Herman RA. Chapter 13: Drug Information Training for Pharmacists. In: Thomas D, eds. *Clinical Pharmacy Education, Practice and Research*, 1st Edition. Cambridge, MA. Elsevier; 2019.
2. Rajendran N, Thomas D, Madhavan S, Herman RA. Chapter 24: Ethics in Clinical Research. In: Thomas D, eds. *Clinical Pharmacy Education, Practice and Research*, 1st Edition. Cambridge, MA. Elsevier; 2019.
3. Herman RA: General approaches to clinical pharmacokinetic monitoring. In: *Pharmacokinetics in Drug Discovery and Development*, Schoenwald RD, editor. Boca Raton: CRC Press, 2002, pp 115-126.
4. Herman RA: Non-compartmental Modeling: An Overview. In: *Pharmacokinetics in Drug Discovery and Development*, Schoenwald RD, editor. Boca Raton: CRC Press, 2002, pp 283-294.

JOURNAL ARTICLES AND OTHER CONTRIBUTIONS

Publications – Peer-Reviewed Research

1. Herman RA, Gilchrist B, Link BK, Carnahan R. A systematic review of validated methods for identifying lymphoma using administrative data. *Pharmacoepidemiol Drug Saf* 2012;21(Suppl 1):203-12. PubMed ID: 22262607
2. Carnahan RM, Herman RA, Moores KG. A systematic review of validated methods for identifying transfusion-related sepsis using administrative and claims data. *Pharmacoepidemiol Drug Saf* 2012;21(Suppl 1):222-9. PubMed ID: 22262609
3. Herman RA, Noormohamed S, Hirankarn S, Shelton MJ, Huang E, Morse GD, Hewitt RG and Stapleton JT: Comparison of a neural network approach with five traditional methods for predicting creatinine clearance in patients with human immunodeficiency virus infection. *Pharmacotherapy* 1999;19(6):734-740. PubMed ID: 10391419
4. Herman RA, Veng-Pedersen P, Miotto J, Komorowski J and Kealey GP: Pharmacokinetics of morphine sulfate in patients with burns. *J Burn Care Rehabil* 1994;15(2):95-103. PubMed ID: 8195267
5. Herman RA and Veng-Pedersen P: Quantitative structure-pharmacokinetic relationships for systemic drug distribution kinetics not confined to a congeneric series. *J Pharm Sci* 1994;83(3):423-428. PubMed ID: 8207695
6. Furst DE, Herman RA, Koehnke R, Ericksen N, Hash L, Riggs CE, Porras A and Veng-Pedersen P: Effect of aspirin and sulindac on methotrexate clearance. *J Pharm Sci* 1990;79(9):782-786. PubMed ID: 2273459 IDIS/Web ID: 271200

7. Herman RA, Veng-Pedersen P, Hoffman J, Koehnke R and Furst DE: Pharmacokinetics of low-dose methotrexate in rheumatoid arthritis patients. *J Pharm Sci* 1989;78(2):165-171. PubMed ID: 2715941 IDIS/Web ID: 250620
8. Rooney TW, Lorber A, Veng-Pedersen P, Herman RA, Meehan R, Hade J, Hade A and Furst DE: Gold pharmacokinetics in breast milk and serum of a lactating woman. *J Rheumatol* 1987;14(6):1120-1122. PubMed ID: 3125315
9. Helling DK, Hepler CD and Herman RA: Comparison of computer-assisted medical record audit with other drug use review methods. *Am J Hosp Pharm* 1979;36(12):1665-1671. PubMed ID: 525643

REVIEWS:

Publications – Peer-Reviewed Case Reports or Reviews

1. Herman RA, Kee VR, Moores KG and Ross MB: Etiology and treatment of community-associated methicillin-resistant *Staphylococcus aureus*. *Am J Health Syst Pharm* 2008;65(3):219-25. PubMed ID: 18216006 IDIS/Web ID: 589852
2. Goedken AM and Herman RA: Once-daily abacavir in place of twice-daily administration. *Ann Pharmacother* 2005;39(7-8):1302-1308. PubMed ID: 15956231 IDIS/Web ID: 535383
3. Modrzejewski KA and Herman RA: Emtricitabine: a once-daily nucleoside reverse transcriptase inhibitor. *Ann Pharmacother* 2004;38(6):1006-1014. PubMed ID: 15121999 IDIS/Web ID: 538505
4. Herman RA and Veng-Pedersen P: A note regarding curve fitting with a sum of exponentials. *Biopharm Drug Dispos* 1988;9(6):579-586. PubMed ID: 3228577
5. Herman RA: Drug therapy considerations in the elderly. *S Afr Med J* 1982;61(15):544-546. PubMed ID: 7038926 IDIS/Web ID: 150468

Publications – Invited

1. Herman RA, Ciliberto M: 2019 Report on Medical Cannabidiol, UI Carver College of Medicine and UI College of Pharmacy. Reviewed by Jennifer Harbison, Director of Health Policy, Office of the Vice President for Medical Affairs. Submitted July 19, 2019 via the State Board of Regents to the Department of Public Health and the Iowa General Assembly. Published in the Iowa Legislative Reports, July 29, 2019 (3 pages.). <https://www.legis.iowa.gov/docs/publications/DF/1050471.pdf>.
2. Herman RA, Ciliberto M: 2017 Report on Medical Cannabidiol, UI Carver College of Medicine and UI College of Pharmacy. Reviewed by Jennifer Harbison, Director of Health Policy, Office of the Vice President for Medical Affairs. Submitted July 19, 2017 via the State Board of Regents to the Department of Public Health and the Iowa General Assembly. Published in the Iowa Legislative Reports, July 20, 2016 (8 pages.). <https://www.legis.iowa.gov/docs/publications/DF/860395.pdf>.
3. Joshi C, Herman RA: 2016 Report on Medical Cannabidiol, UI Carver College of Medicine and UI College of Pharmacy. Reviewed Jennifer Vermeer, Asst. V.P. for Health Policy and Population Health, the Deans of the Colleges of Medicine and Pharmacy and the Vice President for Medical Affairs. Submitted June 29, 2016 via the State Board of Regents to the Department of Public Health and the Iowa General Assembly. Published in the Iowa Legislative Reports, July 6, 2016 (7 pages.). <https://www.legis.iowa.gov/docs/publications/DF/797894.pdf>
4. Herman RA: Report on Medical Cannabidiol, UI Carver College of Medicine and UI College of

Pharmacy. Reviewed by Dr. Charuta Joshi, Jennifer Vermeer, Asst. V.P. for Health Policy and Population Health, the Deans of the Colleges of Medicine and Pharmacy and the Vice President for Medical Affairs. Submitted June 25, 2015 via the State Board of Regents to the Department of Public Health and the Iowa General Assembly. Published in the Iowa Legislative Reports, July 1, 2015 (5 pages.). <https://www.legis.iowa.gov/docs/publications/DF/680264.pdf>

5. Herman RA. *IDIN Answers – An Additional Resource Associated with IDIS/Web*. *World Drug Info* 2012;23(1):1-8.
6. Herman RA. Establishing Best Practices for Pharmacists on Short Term Mission Trips. *Christianity & Pharmacy* 2011;14(1)7-11.
7. Al-Agil N, Herman RA. IDIS/Web Search Strategies for Drug Toxicology and Adverse Drug Reactions *World Drug Info* 2010;21(4):1-4.
8. Bohling K, Herman RA. Scientific Evidence Concerning Medical Marijuana Use (0.1 CEU). *World Drug Info* 2009;20(4):1-12. IDIS/Web ID: 637559
9. Herman RA. Inhaled Anti-infectives (0.1 CEU). *World Drug Info* 2008;19(4):1-5.
10. Herman RA: Role of Drug Therapy in Mild Cognitive Impairment (0.1 CEU). *World Drug Info* 2007;18(3):1-5.
11. Herman RA: Book Review: Basic Pharmacokinetics. *J Pharm Technol* 2007;23(6):381-382.
12. Herman RA: PDA's to enhance pharmaceutical care at the point of care. *Pharmacy ME* 2007;15(2):18-20.
13. Herman RA: Book Review: MEDLINE: A Guide to Effective Searching in PubMed and Other Interfaces, 2nd Edition. *Ann Pharmacother* 2006;40(10):1894-1895.
14. Herman RA: New Publications: Mosby's Drug Consult 2005 Handheld Software on CD-ROM (Mosby's Rx). *J Pharm Technol* 2006;22(2):132-133.
15. Herman RA: Drug Information, PDAs and Primary Literature: What's the Connection? *World Drug Info* 2006;17(1):1-7.
16. Storck M and Herman RA: Possible pandemic threat on the horizon - avian influenza A (H5N1) (0.1 CEU). *World Drug Info* 2005;16(4):1-4.
17. Herman RA, Kitzman D and Alcorn S: Policosanol: A non-prescription dietary supplement to control hyperlipidemia (0.1 CEU). *World Drug Info* 2004;15(2):1-7. IDIS/Web ID: 526215
18. Herman R: Safe administration of intravenous immune globulin (IVIG). (0.1 CEU). *World Drug Info* 2004;15(1):1-5. IDIS/Web ID: 526055
19. Herman R: Current issues related to therapeutic drug monitoring: Vancomycin (0.1 CEU). *World Drug Info* 2003;14(1):1-6. IDIS/Web ID: 505162
20. Herman R: Current issues related to therapeutic drug monitoring: Aminoglycosides (0.1 CEU). *World Drug Info* 2002;13(3):1-5. IDIS/Web ID: 505158

Appendix B

Presentations:

RESEARCH (Peer Reviewed Abstracts):

1. Parsai S, Herman RA and Johnson SJ: Systematic literature review of randomized controlled trials to evaluate the efficacy of medical marijuana for analgesia. *Pharmacotherapy* 2014; 34(10):e287 [Poster #406] Presented at: ACCP 2014 Annual Meeting, Austin, TX, Oct. 13, 2014.
2. Saadah LM, Herman RA and Saadah SM: Complications following elective and non-elective cesarean section: a neural network analysis approach and prediction of post-surgical febrile morbidity and infections. *Pharmacotherapy* 2007; 27(4):e16 [[Poster #44]] Presented at: ACCP 2007 Spring Practice and Research Forum, Memphis, TN, Apr. 24, 2007.
3. Saadah LM and Herman RA: Cefuroxime plus or minus metronidazole versus piperacillin and tazobactam in antimicrobial surgical prophylaxis for cesarean section: from drug utilization reviews to pharmacotherapy outcomes evaluations. *ASHP Abstracts and Programs on CDROM* 2006; [Poster SP185] Presented at: 41st Annual ASHP Midyear Clinical Meeting, Anaheim, CA, Dec. 4, 2006.
4. Herman RA: PDA NutriCalc a PDA program to facilitate nutritional assessment at the point of care. *Am J Pharm Educ* 2005; 60(3):S19 [Poster #S19] Presented at: American Association of Colleges of Pharmacy Annual Meeting, Cincinnati, OH, July 10, 2005.
5. Herman RA: Evaluation of student nutritional assessment recommendations with and without the use of a PDA program. *Am J Pharm Educ* 2005; 60(3):S78 [Poster #S78] Presented at: American Association of Colleges of Pharmacy Annual Meeting, Cincinnati, OH, July 10, 2005.
6. Goedken AM and Herman RA: Determination of the preferred time to send a quality assurance survey. [Presentation #1G3] Presented at: Midwest Pharmacy Residents Conference, Omaha, NE, May 6, 2005.
7. Herman RA, Cheng KJ, Lewis RW and Kealey GP: Comparison of the time below minimum inhibitory concentration (MIC) in burn patients and a control group following simulation of single daily dose aminoglycoside using measured multi-dose pharmacokinetic parameters. *J Burn Care Rehabil* 2001; 22(2):S97 [Presentation #101] Presented at: American Burn Association 33rd Annual Meeting, Boston, MA, Apr. 20, 2001.
8. Herman RA, Heinle J and Kealey GP: Evaluating the optimal oral dose of midazolam for conscious sedation. *J Burn Care Rehabil* 2001; 22(2):S80 [Presentation #69] Presented at: American Burn Association 33rd Annual Meeting, Boston, MA, Apr. 20, 2001.
9. Hirankarn S, Downs C, Street WN and Herman RA: Prediction of two ranges of cyclosporine level (subtherapeutic and toxic) using feature subset selection and artificial neural networks.. *AAPS PharmSci* 2000; 2(S1):[Poster #2588] Presented at: American Association of Pharmaceutical Scientists 2000 Annual Meeting, Indianapolis, IN, Oct. 31, 2000.
10. Hirankarn S, Herman RA and Cowles MK: Excellent predictive performance by hierarchical Bayesian approach using Gibbs sampler in population analysis. *AAPS PharmSci* 1999; 1(S1):[Poster/Podium #2001] Presented at: American Association of Pharmaceutical Scientists 1999 Annual Meeting, New Orleans, LA, Nov. 16, 1999.
11. Herman RA, Rosenquist MD and Chang P: The efficacy of combining 0.5% mafenide acetate suspension and nystatin as a broad spectrum topical burn wound antimicrobial. *J Burn Care Rehabil* 1999; 20(1):S233 [Poster #192] Presented at: American Burn Association 31st Annual Meeting, Orlando, FL, Mar. 25, 1999.

12. Chang P, Herman RA and Rosenquist MD: The efficacy of combining Neosporin GU irrigant and nystatin as a burn wound antimicrobial dressing. *J Burn Care Rehabil* 1999; 20(1):S232 [Poster #190] Presented at: American Burn Association 31st Annual Meeting, Orlando, FL, Mar. 25, 1999.
13. Rosenquist MD, Herman RA and Chang P: The efficacy and potency of combining nystatin with 0.1% silver sulfadiazine slurry as a broad spectrum topical antimicrobial. *J Burn Care Rehabil* 1999; 20(1):S231 [Poster #189] Presented at: American Burn Association 31st Annual Meeting, Orlando, FL, Mar. 25, 1999.
14. Hirankarn S, Herman RA, Noormoamed S, Stapleton JT, Shelton MJ and Hewitt RG: Comparison of an artificial neural network approach with five traditional methods for creatinine clearance prediction in human immunodeficiency virus infected individuals. *AAPS PharmSci* 1998; 1(1):S135 [Poster/Podium #2004] Presented at: American Association of Pharmaceutical Scientists 1998 Annual Meeting, San Francisco, CA, Nov. 17, 1998.
15. Hirankarn S, Phillips BG, Herman RA, Pesek CA, Narkiewicz K and Somers VK: Pharmacodynamic analysis by artificial neural network: mean arterial pressure prediction in obstructive sleep apnea. *AAPS PharmSci* 1998; 1(1):S136 [Poster/Podium #2007] Presented at: American Association of Pharmaceutical Scientists 1998 Annual Meeting, San Francisco, CA, Nov. 17, 1998.
16. Hirankarn S, Phillips BG, Herman RA, Pesek CA, Narkiewicz K and Somers VK: Merit of artificial neural network in population analysis. *AAPS PharmSci* 1998; 1(1):S520 [Poster #3561] Presented at: American Association of Pharmaceutical Scientists 1998 Annual Meeting, San Francisco, CA, Nov. 18, 1998.
17. Herman RA, Chang P, Rosenquist MD and Kealey GP: Stability and potency of 0.1% silver sulfadiazine slurry. *J Burn Care Rehabil* 1998; 19(1):S138 [Presentation #8] Presented at: American Burn Association 30th Annual Meeting, Chicago, IL, Mar. 19, 1998.
18. Chang P, Rosenquist MD, Herman RA and Kealey GP: Risk of contamination of topical antimicrobial mixtures with repeated use. *J Burn Care Rehabil* 1998; 19(1):S232 [Poster #195] Presented at: American Burn Association 30th Annual Meeting, Chicago, IL, Mar. 19, 1998.
19. Rosenquist MD, Herman RA, Chang P, Lewis RW and Kealey GP: Minimum inhibitory concentration of mafenide acetate against burn wound pathogens. *J Burn Care Rehabil* 1998; 19(1):S231 [Poster #192] Presented at: American Burn Association 30th Annual Meeting, Chicago, IL, Mar. 19, 1998.
20. Herman RA, Hirankarn S and Min DI: Gender comparison in prediction of cyclosporine dosage in liver transplant patients by artificial neural network. *Pharm Research* 1997; 14(11):S246 [Poster #2081] Presented at: American Association of Pharmaceutical Scientists 1997 Annual Meeting, Boston, MA, Nov. 4, 1997.
21. Herman RA: Neural network prediction of pharmacokinetic parameters from physicochemical characteristics. *Pharm Research* 1997; 14(11):S246 [Poster #2082] Presented at: American Association of Pharmaceutical Scientists 1997 Annual Meeting, Boston, MA, Nov. 4, 1997.
22. Chang P, Rosenquist MD, Herman RA, Lewis II RW and Kealey GP: Mafenide acetate slurry and neosporin mixture as a possible broad spectrum burn wound topical antimicrobial. *J Burn Care Rehabil* 1997; 18(1):S181 [Poster #222] Presented at: American Burn Association 29th Annual Meeting, New York, NY, Mar. 20, 1997.
23. Herman RA and Min DI: Artificial neural network prediction of cyclosporine dose in liver transplant patients. *Clin Pharmacol Ther* 1997; 61(2):157 [Poster #PI81] Presented at: 98th Annual Meeting of the American Society for Clinical Pharmacology and Therapeutics, San Diego, CA, Mar. 5, 1997.
24. Herman RA, Kim LJ and Kealey GP: Effect of patient age, time since burn, and extent of burn

- injury on vancomycin pharmacokinetics. *Pharm Research* 1996; 13(9):S115 [Poster #CS3004] Presented at: American Association of Pharmaceutical Scientists 1996 Annual Meeting, Seattle, WA, Oct. 28, 1996.
25. Herman RA, Lewis RW and Kealey GP: Changes in vancomycin pharmacokinetics in burn patients. *Proceedings of the American Burn Association* 1996; 28:166 [Poster #245] Presented at: American Burn Association 28th Annual Meeting, Nashville, TN, Mar. 15, 1996.
 26. Rosenquist MD, Herman RA, Lewis RW and Kealey GP: Stability and potency of 5% mafenide acetate suspension over time. *Proceedings of the American Burn Association* 1996; 28:173 [Poster #260] Presented at: American Burn Association 28th Annual Meeting, Nashville, TN, Mar. 15, 1996.
 27. Rosenquist MD, Herman RA, Lewis RW and Kealey GP: Potency and stability of Neosporin as a burn wound antimicrobial over prolonged storage time. *Proceedings of the American Burn Association* 1996; 28:174 [Poster #261] Presented at: American Burn Association 28th Annual Meeting, Nashville, TN, Mar. 15, 1996.
 28. Herman RA, Lewis II RW and Kealey GP: Rapidly achieving target vancomycin concentrations in hypermetabolic burn patients. *Crit Care Med* 1995; 23(1 Suppl.):A68 [Poster #94] Presented at: Society of Critical Care Medicine 24th Educational and Scientific Symposium, San Francisco, CA, Feb. 1, 1995.
 29. Herman RA, Lewis II RW and Kealey GP: Enhanced vancomycin dosing in burn patients using an improved method to estimate creatinine clearance. *Can J Physiol Pharmacol* 1994; 72(Suppl 1):298 [Poster #12.2.5] Presented at: 12th International Congress of Pharmacology, Montreal, Canada, July 27, 1994.
 30. Herman RA, Veng-Pedersen P and Kealey GP: Application of a neural network to enhance prediction of creatinine clearance in patients with burns. *Pharm Res* 1994; 11(Suppl):S362 [Podium Presentation PPDM#8119] Presented at: American Association of Pharmaceutical Scientists 9th Annual Meeting, San Diego, CA, Nov. 7, 1994.
 31. Herman RA and Kealey GP: Measured creatinine clearance compared to predicted creatinine clearance in burn patients. *Pharm Res* 1993; 10(Suppl):S103 [Poster CS#3009] Presented at: American Association of Pharmaceutical Scientists 9th Annual Meeting, Lake Buena Vista, FL, Nov. 17, 1993.
 32. Herman RA and Kealey GP: Increased creatinine clearance in burn patients. *Medicina Intensiva* 1993; 17(Suppl 1):S90 [Presentation #327] Presented at: 6th World Congress on Intensive and Critical Care Medicine, Madrid, Spain, June 16, 1993.
 33. Herman RA and Kealey GP: Altered elimination of vancomycin in burn patients. *Medicina Intensiva* 1993; 17(Suppl 1):S102 [Presentation #373] Presented at: 6th World Congress on Intensive and Critical Care Medicine, Madrid, Spain, June 15, 1993.
 34. Herman RA and Veng-Pedersen P: Drug distribution kinetics related to physicochemical characteristics. *Pharm Res* 1993; 9(10):S329 [Poster PPDM#8292] Presented at: American Association of Pharmaceutical Scientists 7th Annual Meeting, San Antonio, TX, Nov. 18, 1992.
 35. Herman RA, Veng-Pedersen P and Kealey GP: Clearance of morphine sulfate oral solution and sustained release (MS Contin®) in burn patients. *Proceedings of the American Burn Association* 1992; 24:55 [Presentation #55] Presented at: American Burn Association 24th Annual Meeting, Salt Lake City, UT, Apr. 2, 1992.
 36. Herman RA, Veng-Pedersen P, Komorowski J and Kealey GP: Pharmacokinetics of morphine sulfate in burn patients. *Clin Pharmacol Ther* 1992; 51(2):133 [Poster #PI-48] Presented at: American Society for Clinical Pharmacology and Therapeutics 93rd Annual Meeting, Orlando, FL, Mar. 18, 1992.
 37. Furst DE, Koehnke R, Herman RA, Hoffman J, Kohler J and Burmeister L: Methotrexate (MTX)

- kinetics may predict outcome in rheumatoid arthritis (RA) patients. *Arthritis Rheum* 1990; 33(Suppl):S61 [Poster #A119] Presented at: American College of Rheumatology 54th Annual Scientific Meeting, Seattle, WA, Oct. 29, 1990.
38. Kealey GP, Herman RA, Veng-Pedersen P, Heinle J and Lewis RW: Relative bioavailability of morphine-sulfate sustained-release (MS Contin) compared to morphine-sulfate oral solution in burn patients. *Eur J Pharmacol* 183(6):2377 [Presentation #2377] Presented at: 11th International Congress of Pharmacology, Amsterdam, Holland, July 6, 1990.
 39. Herman RA, Kealey GP, Veng-Pedersen P, Heinle J and Lewis II RW: Relative bioavailability of morphine sulfate sustained release (MS Contin[®]) compared to morphine sulfate oral solution in burn patients. *Proceedings of the American Burn Association* 1990; 22:210 [Presentation #210] Presented at: American Burn Association 22nd Annual Meeting, Las Vegas, NV, Mar. 30, 1990.
 40. Furst DE, Ericksen N, Koehnke R, Hoffman J, Clute L, Veng-Pedersen P and Herman RA: Effect of long-term low dose methotrexate (MTX) on MTX kinetics in rheumatoid arthritis (RA). *Clin Pharmacol Ther* 1990; 47(2):139 [Poster #PP-57] Presented at: American Society for Clinical Pharmacology and Therapeutics 91st Annual Meeting, San Francisco, CA, Mar. 21, 1990.
 41. Furst DE, Herman RA, Koehnke R, Ericksen N, Hash L, Porras A and Veng-Pedersen P: The effect of aspirin (ASA) or sulindac (SU) on methotrexate (MTX) clearance. *Arthritis Rheum* 1989; 32(Suppl):S60 [Poster #B65] Presented at: American College of Rheumatology 53rd Annual Scientific Meeting, Cincinnati, OH, June 15, 1989.
 42. Furst DE, Herman RA, Hoffman J, Koehnke R and Veng-Pedersen P: Serum kinetics, synovial fluid levels and liver concentrations of MTX in 41 RA patients given methotrexate (MTX). *Arthritis Rheum* 1988; 31(Suppl):S116 [Poster #D83] Presented at: American College of Rheumatology 52nd Annual Scientific Meeting, Houston, TX, May 28, 1988.

INVITED PRESENTATIONS:

International:

1. Herman RA (Moderator): *The Future of Pharmacy Education*. Panel: Jolowsky C—Early Experiential Education in the Curriculum, Alkhateeb FM—Clinical Pharmacy Education in the U.S.; and Engle JP—Clinical Bedside Teaching: Teaching on the Run DUPHAT – Dubai International Pharmaceutical Technologies Conference & Exhibition, Dubai, UNITED ARAB EMIRATES, March 10, 2015; 2 Hr. program to 400 pharmacists and/or students
2. Herman RA: *Workshop: The Use of Handheld/Tablet Resources to Access Drug Information*. DUPHAT – Dubai International Pharmaceutical Technologies Conference & Exhibition, Dubai, UNITED ARAB EMIRATES, March 9, 2015; 1 Hr. workshop to 100 pharmacists and/or students.
3. Herman RA: *The Changing Role of Drug Information Centers with the Growth of Strong Clinical Pharmacy Services*. DUPHAT – Dubai International Pharmaceutical Technologies Conference & Exhibition, Dubai, UNITED ARAB EMIRATES, March 8, 2015; 1 Hr. of lecture to 400 pharmacists and/or students.
4. Herman RA: *Drug Information Sources*. Medical Resident Training, CURE Hospital International, Kabul, AFGHANISTAN, May 17, 2006; 1 Hr. of lecture to 15 medical residents.
5. Herman RA: *The Internet as a Tool for Medical Professionals*. Medical Resident Training, CURE Hospital International, Kabul, AFGHANISTAN, May 17, 2006; 2 Hrs. of hands on training to medical residents.
6. Herman RA: *Medical Management of the Burn Patient*. Medical Resident Training, CURE Hospital

International, Kabul, AFGHANISTAN, May 16, 2006; 1 Hr. of lecture to 25 medical residents and house staff.

7. Herman RA: *Drug Literature Evaluation and How to Operate a National Drug and Poison Information Center*. Pharmacist Training, General Authority for Health Services, Abu Dhabi, UNITED ARAB EMIRATES, Sept. 10, 2005; 12 Hrs. of lecture and 48 hours of supervised training to 12 pharmacists.
8. Herman RA: *How to Use IDIS/Web*. Pharmacist Training, General Authority for Health Services, Abu Dhabi, UNITED ARAB EMIRATES, Sept. 10, 2005; 4 Hrs. of lecture to 65 pharmacists.
9. Herman RA: *How to Provide Drug Information Services and How to Use IDIS/Web*. Standing Committee on Drugs, Botswana Department of Health and Social Welfare, Gaborone, BOTSWANA, May 17 - 21, 2004; 5 days of personalized training for 3 pharmacists.
10. Herman RA: *Clinical Pharmacokinetics: Therapeutic Drug Monitoring*. Advanced Pharmacokinetics Course II, Universidade de Lisboa, Lisbon, PORTUGAL, February 16 & 17, 2000; 5 Hrs. of lecture.
11. Herman RA: *Model Independent Approach to Pharmacokinetic Data Analysis*. Advanced Pharmacokinetics Course II, Universidade de Lisboa, Lisbon, PORTUGAL, February 18 & 21, 2000; 5 Hrs. of lecture.

National:

1. Herman RA, THC, CBD and now Hemp Oil: Do they work? Are they safe? What's available legally?, Midwest Pharmacy Expo, Des Moines, IA, Feb. 8, 2020; 1 Hr ACPE# 0107-9999-20-028-L01-P.
2. Herman RA. *Honoring God through Pharmacy: A Panel Discussion on Leadership*. C.E. Lecture, Christian Pharmacists Fellowship International Annual Meeting, Myrtle Beach, SC, May. 23, 2018; 1.25 Hr. ACPE# 0088-9999-19-079-L04-P.
3. Herman RA. *Student Pharmacist Outreach Opportunities*, Student Retreat Talk, CPFI 2019 National Student Retreat, Myrtle Beach, SC, May. 23, 2018; 1 Hr.
4. Herman RA. *Update on Tropical Medicine*. C.E. Lecture, Christian Pharmacists Fellowship International Annual Meeting, Myrtle Beach, SC, Jun. 11 2016; 1.0 Hr. ACPE# 0088-9999-16-065-L04-P.
5. Herman RA. *Pharmacist Mission Roles*. C.E. Lecture, Christian Pharmacists Fellowship International Annual Meeting, Flat Rock, NC, Jun. 6 2015; 1.0 Hr. ACPE# 0088-9999-15-059-L04-P.
6. Eckel F, Whaba W, Hames H, Allhands, KW, Lutz S, Sims L, and Herman RA. *Honoring God Through Pharmacy: Sharing Life Experiences*. C.E. Panel Discussion, Christian Pharmacists Fellowship International Annual Meeting, Springmaid Beach, SC, Jun. 13, 2014; 1.5 Hr. ACPE# 0088-9999-14-061-L04-P.
7. Herman RA. *Judicious Antibiotic Use in Developing Countries*. C.E. Lecture, Christian Pharmacists Fellowship International Annual Meeting, Flat Rock, NC, Jun. 8, 2013; 1 Hr. ACPE# 0088-9999-13-083-L01-P.
8. Herman RA. *The pharmacist's role on a short-term medical mission: A panel discussion*. C.E. Lecture, Christian Pharmacists Fellowship International Annual Meeting, Flat Rock, NC, Jun. 8, 2013; 1 Hr. ACPE# 0088-9999-13-082-L04-P.
9. Herman RA. *Judicious Antibiotic Treatment in Developing Countries*. C.E. Lecture, Global Missions Health Conference, Louisville, KY, Nov. 9, 2012; 1 Hr.

10. Herman RA. *Drug Information Resources*. C.E. Lecture, Alaska Pharmacists Association Annual Meeting, Anchorage, AK, Feb. 19, 2012; 1.5 Hr. ACPE# 0139-0000-12-116-L04-P.
11. Herman RA. *Scientific Evidence Concerning Medical Marijuana Use*. [Podium Report] Presented at: Alaska Board of Pharmacy Discussion on Medical Marijuana, Anchorage, AK; Feb. 17, 2012.
12. Herman RA. *Establishing Best Practices for Pharmacists on Short Term Mission Trips*. C.E. Lecture, Christian Pharmacists Fellowship International Annual Meeting, Springmaid Beach, SC, June 10, 2011; 1 Hr. ACPE# 0088-9999-11-037-L04-P.
13. Herman RA. *Potential Dangers Associated with Treatment and Prophylaxis of Malaria*. C.E. Lecture, Global Missions Health Conference, Louisville, KY, Nov. 13, 2010; 1 Hr.
14. Herman RA. *Review of the WHO Guidelines for the Treatment of Malaria*. C.E. Lecture, Global Missions Health Conference, Louisville, KY, Nov. 13 & 14, 2009; 1 Hr. (delivered twice).
15. Herman RA. *POEMs: Patient Oriented Evidence that Matters*. C.E. Lecture, Christian Pharmacists Fellowship International Annual Meeting, West Palm Beach, FL, June 23, 2009; 1 Hr. ACPE# 088-999-09-044-L04-P.
16. Herman RA, Haack S, Johnson J, Soltis D, Seaba H. *Pharmacists Making a Difference: Insight into Pharmacy Mission Trips. Panel Discussion*, Iowa Pharmaceutical Association Educational Expo, Des Moines, IA, Jan. 25, 2009; 1 Hr.
17. Herman RA and Gray GC: *Being Prepared for a Possible Pandemic Threat – Avian Influenza*. C.E. Lecture, Global Missions Health Conference, Louisville, KY, Nov. 10, 2006; 1 Hr. ACPE .
18. Herman RA: *Drug Info at Your Fingertips: PDA's and Pocket Resources*. C.E. Lecture, Christian Pharmacists Fellowship International Annual Meeting, SpringMaid Beach, SC, June 14, 2005; 1 Hr. ACPE # 088-999-05-005-L04.
19. Herman RA: *Moderator: Missionary Pharmacist Panel*. C.E. Lecture, Christian Pharmacists Fellowship International Annual Meeting, SpringMaid Beach, SC, June 14, 2005; 1 Hr. ACPE # 088-999-05-006-L04.
20. Herman RA: *Drug Info at Your Fingertips: PDA's and Pocket Resources for Short Term Mission Trips*. C.E. Lecture, Global Missions Health Conference, Louisville, KY, November 12 & 13, 2004; 1 Hr. ACPE# 143-000-04-63-L01.
21. Herman RA: *Panel: Missionary Pharmacy Experiences*. C.E. Lecture, Christian Pharmacists Fellowship International Annual Meeting, Colorado Springs, CO, June 15, 2004; 1 Hr. ACPE # 088-999-04-009-L04.
22. Herman RA: *Medications To Go: A Mobile Pharmacy for Short Term Missions*. C.E. Lecture, Global Missions Health Conference, Louisville, KY, Nov. 7, 2003; 1 Hr. ACPE# 143-999-03-47-L01.
23. Herman RA: *Exploring PDA Usage: From Quiet Time to the Dispensing Counter to the Bedside*. C.E. Lecture, Christian Pharmacists Fellowship International Regional Meeting, Vassar, KS, July 26, 2003; 3 Hr. ACPE # 088-999-03-028-L04.
24. Herman RA: *PDA Use by Pharmacy Practice Faculty and Concerns About Student Use/Misuse*. AACP 2003 Annual Meeting, EBIR SIG Series of Instruction & Technology Related Topics, Minneapolis, MN, July 21, 2003; 2 Hr. ACPE # 038-999-03-041-L04.
25. Herman RA: *Antiparasitic Medications*. C.E. Lecture, Christian Pharmacists Fellowship International Annual Meeting, SpringMaid Beach, SC, June 25, 2003; 1 Hr. ACPE # 088-999-03-014-L01.
26. Herman RA and Herman B: *Doing Medical Missions: A Pharmacist's Experience*. C.E. Lecture, Christian Pharmacists Fellowship International Annual Meeting, SpringMaid Beach, SC, June 25,

- 2003; 1 Hr. ACPE # 088-999-03-013-L04.
27. Herman RA: *Antiparasitic Medications: Pharmacology, Dosing, Drug Interactions, and Adverse Effects*. C.E. Lecture, Global Missions Health Conference, Louisville, KY, Nov. 2, 2002; 1 Hr. AMA CE Category 1.
 28. Herman RA and Modrzejewski K: *Clinical Research on the Mission Field. What's Appropriate and What's Not?* C.E. Lecture, Global Missions Health Conference, Louisville, KY, Nov. 1, 2002; 1 Hr. AMA CE Category 1.
 29. Herman RA: *Pharmacotherapy of Bacterial & Viral Infections Encountered on Medical Missions*. C.E. Lecture, Medical Missions Conference, Louisville, KY, Nov. 3, 2001; 1 Hr. AMA CE Category 1.
 30. Herman RA: *Pharmacotherapy of Tropical Diseases Encountered on Medical Missions*. C.E. Lecture, Medical Missions Conference, Louisville, KY, Nov. 3, 2001; 1 Hr. AMA CE Category 1.
 31. Herman RA: *Pharmacotherapy of Drugs Commonly Used on Medical Missions*. C.E. Lecture, Christian Pharmacists Fellowship International Annual Meeting, SpringMaid Beach, SC, June 19, 2001; 2 Hr. ACPE # 088-999-01-017-L01.
 32. Herman RA: *The Role of the Pharmacist: Daily Responsibilities and Activities*. C.E. Lecture, Medical Missions Conference, Louisville, KY, Nov. 18, 2000; 1 Hr. AMA CE Category 1.
 33. Herman RA: *Assessment of Nutritional Needs and Monitoring Nutritional Support for Hospital Based and Home Healthcare Patients*. C.E. Lecture, Christian Pharmacists Fellowship International Regional Meeting, Vassar, KS, July 22, 2000; 3 Hr. ACPE # 088-999-00-019-L04.
 34. Herman RA: *The Plague of Boils: Pharmacotherapy of Topical Skin Infections in Biblical Times and Now*. C.E. Lecture, Christian Pharmacists Fellowship International Annual Meeting, SpringMaid Beach, SC, June 7, 2000; 1 Hr. ACPE # 088-000-00-007-L01.
 35. Herman RA: *The Plague of Boils: Pharmacotherapy of Topical Skin Infections in Biblical Times and Now*. C.E. Lecture, Christian Pharmacists Fellowship International Regional Meeting, Vassar, KS, Aug. 21, 1999; 3 Hr. ACPE #088-000-99-018-L04.
 36. Herman RA: *The Y2K Problem and the Pharmacist*. C.E. Lecture, 12th Annual Christian Pharmacists Fellowship International Annual Meeting, Greenville, SC, July 23, 1999; 1 Hr. ACPE # 088-000-99-013-L04.
 37. Herman RA: *Pharmacotherapy: Care of the Burn Patient*. C.E. Lecture, 11th Annual Christian Pharmacists Fellowship International Annual Meeting, Wilmore, KY, July 23, 1998; 3 Hr. ACPE # 088-000-98-002-L01.
 38. Herman RA: *The Pharmacist in Medical Relief Situations: Developing Cross-Cultural Relationships in Short-term Missions*. C.E. Lecture, 10th Annual Christian Pharmacists Fellowship International Annual Meeting, Springmaid Beach, SC, Aug. 18, 1997; 1 Hr. ACPE # 088-000-97-011-L04.

Local:

1. Herman RA: *Updates on Medical Cannabis Use in Iowa* . Hall-Perrine Cancer Center 30th Annual Cancer Care Update, Cedar Rapids, IA Oct.10, 2019; 1 Hr.
2. Herman RA: *Updates on Medical Cannabis Use in Iowa* . 2019 Fall Cancer Update for Dental Health Professionals, Cedar Rapids, IA Oct. 2nd and repeated the 4th, 2019; 1 Hr.
3. Herman RA: *Updates on Medical Cannabis Use in Iowa* . 2019 Scofield Advanced Oncology Nursing Conference, Coralville, IA Apr. 2, 2019; 1 Hr.
4. Herman RA: *Medical Cannabis – Cannabis Dispensaries Open December 1st – What's Our Role?*

- University of Iowa Issues in Transplantation Conference, Iowa City, IA Dec. 18, 2018; 1 Hr.
5. Herman RA: *Current Iowa Medical Cannabis Regulations*. Blackhawk-Bremer County Pharmacists Association, Cedar Falls, IA Nov. 29, 2018; 1 Hr.
 6. Herman RA: *Current Status of the Iowa Medical Cannabis Program*. Johnson County Pharmacists Association, Iowa City, IA Aug. 30, 2018; C,E. 0107-9999-18-233-L01-P; 1 Hr.
 7. Herman RA: *Current Status of Medical Cannabis Legislation in Iowa*. 14th Annual Iowa Lakes Health Conference, Lake Okoboji, IA Jun. 7, 2018; 1.5 Hr.
 8. Herman RA: *Current Iowa Medical Cannabis Regulations*. Northeast Iowa Medical Education Foundation, Cedar Falls, IA May 2, 2018; 1 Hr.
 9. Herman RA: *Medical Cannabis – The Science & Current Legal Status*. University of Iowa Cancer Center Grand Rounds, Grand Rounds, Iowa City, IA Jan. 26, 2018; 1 Hr.
 10. Herman RA: *Medical Cannabidiol – Dosing Considerations*. Iowa Medical Cannabidiol Advisory Board, Board Meeting, Ankeny, IA Jan. 19, 2018; 1 Hr.
 11. Herman RA: *Medical Cannabis – Weighing the Benefits & the Risks*. Iowa Society for Therapeutic Radiation Oncology, Annual Meeting, Iowa City, IA Oct. 14, 2017; 1 Hr.
 12. Herman RA: *Establishing Best Practices for Pharmacists on Short Term Mission Trips*. Online Lecture, University of the Incarnate Word School of Pharmacy, San Antonio, TX, Oct. 11, 2017; 1 Hr.
 13. Herman RA: *An Introduction to Applied Pharmacokinetics*. Lecture to Physician Assistant Students, St. Ambrose University, Davenport, IA, Jan. 31, 2017; 3 Hr.
 14. Herman RA: *Medical Cannabis – Weighing the Benefits & the Risks*. Iowa Developmental Disabilities Nursing Assoc., Fall Conference, Des Moines, IA Sept. 16, 2016.
 15. Herman RA: *Reflections on Adding Oil to the Fire – Uses of Medical Marijuana for Pediatric Epilepsy*. Pediatric Grand Rounds, University of Iowa Healthcare, Iowa City, IA, Feb. 5, 2016; 1 Hr.
 16. Herman RA: *An Introduction to Applied Pharmacokinetics*. Lecture to Physician Assistant Students, St. Ambrose University, Davenport, IA, Jan. 19, 2016; 3 Hr.
 17. Herman RA: *Malaria Treatment and Prophylaxis*. C.E. Lecture, GHO Trip, Ethiopia, Oct. 27, 2015; 1 Hr.
 18. Herman RA: *Establishing Best Practices for Pharmacists on Short Term Mission Trips*. Online Lecture, University of the Incarnate Word School of Pharmacy, San Antonio, TX, Sept. 30, 2015; 1 Hr.
 19. Herman RA: *An Introduction to Applied Pharmacokinetics*. Lecture to Physician Assistant Students, St. Ambrose University, Davenport, IA, Jan. 13, 2015; 3 Hr.
 20. Herman RA: *Establishing Best Practices for Pharmacists on Short Term Mission Trips*. Online Lecture, University of the Incarnate Word School of Pharmacy, San Antonio, TX, Sept. 3, 2014; 1 Hr.
 21. Herman RA: *Establishing Best Practices for Pharmacists on Short Term Mission Trips*. Online Lecture, University of the Incarnate Word School of Pharmacy, San Antonio, TX, Sept. 11, 2013; 1 Hr.
 22. Herman RA: *A Systematic Approach to Responding to Drug Information Questions*. Online Lecture, Coram Healthcare Pharmacy Residents, Jackson, FL, Aug. 19, 2013; 1 Hr.
 23. Herman RA: *Establishing Best Practices for Pharmacists on Short Term Mission Trips*. Online Lecture, University of the Incarnate Word School of Pharmacy, San Antonio, TX, Feb. 2, 2012 and Sept. 19, 2012; 1 Hr.
 24. Herman RA: *A Systematic Approach to Responding to Drug Information Questions*. Online Lecture, Coram Healthcare Pharmacy Residents, Jackson, FL, Aug. 19, 2013; 1 Hr.

25. Herman RA: *Medical Marijuana, Evaluation of the Evidence*, Community Gathering, Melrose Meadows, Iowa City, IA, Jul. 12, 2011; 0.5 Hour.
26. Herman RA: *Medical Marijuana, Evaluation of the Evidence*, Serotoma Club Luncheon, University Athletic Club, Iowa City, IA, Oct. 21, 2010; 0.5 Hour.
27. Herman RA: *Medical Marijuana, Evaluation of the Evidence*, Oaknoll Retirement Center, Iowa City, IA, July 1, 2010; 0.5 Hour.
28. Herman RA: *Medical Marijuana, Evaluation of the Evidence*, Marshalltown Lions Club Luncheon, Marshalltown, IA, Apr. 4, 2010; 0.5 Hour.
29. Herman RA and Schmidt N: *Mosquitoes and Malaria*, Hawkeye Area Boy Scouts, Wickham School, Iowa City, IA, Mar. 25, 2010; 0.5 Hour.
30. Herman RA, Hanson K, Marinez Narhi R. *Serving Diverse Communities: Practitioner Panel*. Humans Rights Week Diversity Committee Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Jan. 30, 2008
31. Herman RA: *Disaster Preparedness*. 46:006 Dean's Honors Seminar II, University of Iowa College of Pharmacy, Iowa City, IA, Oct. 6, 2006; 1 Hour.
32. Herman RA: *Evaluation of Student Nutritional Assessment Recommendations With and Without the Use of a PDA Program*. Faculty Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Apr. 13, 2005.
33. Herman RA: *Volunteerism*. 46:102 Dean's Honors Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Nov. 13, 2003.
34. Herman RA: *PDA's for Faculty: What to Buy, How to Use and Concerns About Student Use/Misuse*. Faculty Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Mar. 23, 2003; 1 Hr. ACPE# 020-000-03-011-L04.
35. Herman RA: *Drug Information Resources Offered by DDIS: Where To Find Them and How To Use Them*. ICN Broadcast to Pharmacy Preceptors, University of Iowa College of Pharmacy, Iowa City, IA, Nov. 20, 2002; 2 Hr. ACPE# 020-000-02-035-L04.
36. Herman RA: *Report on the Development of an Electronic Clinical Pharmacokinetic Drug Dosing Program for Handheld Devices*. Innovations in Instructional Computing Conference, University of Iowa Lindquist Center, Iowa City, IA, Sept. 12, 2002.
37. Herman RA: *Drug Information Resources Offered by DDIS: Where to Find Them and How to Use Them*. Faculty Research Seminar, Univ of Iowa College of Pharmacy, Iowa City, IA, Apr. 17, 2002.
38. Herman RA: *Artificial Neural Networks: A New Tool for Pharmacokinetics*. Faculty Seminar, University of Mississippi College of Pharmacy, Oxford, MS, Mar. 30, 2001.
39. Herman RA: *Altered Elimination of Antibiotics in Burn Patients*. Faculty Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Oct. 10, 2000; 1 Hr. ACPE # 020-000-00-042-L01.
40. Herman RA: *Stability and Efficacy of Three Topical Antimicrobial Solutions*. Clinical Pharmacy Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Sept. 21, 2000.
41. Herman RA: *Use of Midazolam Syrup in Conscious Sedation*. Nursing Inservice Lecture, Burn Treatment Center, University of Iowa Hospitals & Clinics, Iowa City, IA, Dec. 14 & 15, 1998.
42. Herman RA: *Evaluation of a Neural Network to Enhance Prediction of Creatinine Clearance in Patients with Burns*. Clinical Pharmacy Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Sept. 9, 1998.
43. Herman RA: *Stability and Efficacy of Three Topical Antimicrobial Solutions*. Clinical Pharmacy Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Mar. 31, 1998.
44. Herman RA: *Neural Network Prediction of Pharmacokinetic Parameters from Physicochemical*

- Characteristics*. Clinical Pharmacy Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Nov. 20, 1997.
45. Herman RA: *Stability of Neosporin Solution and Mafenide Acetate Slurry for the Topical Treatment of Thermal Injuries*. Clinical Pharmacy Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Apr. 30, 1997.
 46. Herman RA: *Current Trends in Pharmacokinetic Modeling*. Biotransport Class Presentation, University of Iowa College of Engineering, Iowa City, IA, Dec. 6, 1996.
 47. Herman RA: *Effect of Patient Age, Time Since Burn, and Extent of Burn Injury on Vancomycin Pharmacokinetics*. Clinical Pharmacy Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Oct. 16, 1996.
 48. Kim LJ and Herman RA: *Medicine Safety*. 4th Annual Health and Safety Fair, University of Iowa Field House, Iowa City, IA, May 14, 1996.
 49. Herman RA: *Population Pharmacokinetics*. Clinical Pharmacy Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Nov. 13, 1995.
 50. Herman RA: *Medicine Safety*. Health and Safety Fair, University of Iowa Field House, Iowa City, IA, May 16, 1995.
 51. Herman RA: *Neural Networks as a Research Tool in Pharmacokinetics*. Honors Seminar, University of Iowa College of Pharmacy, Iowa City, IA, May 2, 1995.
 52. Herman RA: *Application of Neural Networks to Clinical Pharmacokinetics/ Pharmacodynamics*. Pharmacy Research Seminar, Univ. of Iowa College of Pharmacy, Iowa City, IA, Feb. 15, 1995.
 53. Herman RA: *An Introduction to Neural Networks in Clinical Pharmacokinetics*. Pharmacy Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Nov. 17, 1993.
 54. Herman RA: *Age Related Pharmacokinetic Changes*. Clinical Skills Course, University of Iowa Hospitals & Clinics, Iowa City, IA, Oct. 14, 1992.
 55. Herman RA: *Basic Pharmacokinetics*. Clinical Skills Course, University of Iowa Hospitals & Clinics, Iowa City, IA, Sept. 23, 1992.
 56. Herman RA: *Pharmacokinetics of Continuous Release Morphine in Burn Patients*. Pharmaceutics Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Feb. 17, 1992.
 57. Herman RA: *Drug Distribution Kinetics Related to Physicochemical Characteristics*. Pharmaceutics Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Mar. 31, 1989.
 58. Herman RA: *Curve Fitting with a Sum of Exponentials*. Pharmaceutics Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Sept. 25, 1987.
 59. Herman RA: *Pharmacokinetics of Low Dose Methotrexate in Rheumatoid Arthritis Patients*. Pharmaceutics Research Seminar, Univ of Iowa College of Pharmacy, Iowa City, IA, Nov 14, 1986.
 60. Herman RA: *Quantitative Relationships Between Physicochemical Properties of Drugs and Their Pharmacokinetics*. Pharmaceutics Research Seminar, University of Iowa College of Pharmacy, Iowa City, IA, Sept. 6, 1985.

Contributions to Other Institutional Programs:

1. Herman RA: P&T Committee Safety Reviews for IRB Applications. Academy for Research Professionals, ICTS Conference Room, Iowa City, IA Jan. 9, 2018.
2. Herman RA: Update of Medical Cannabis Legislation. Medical Marijuana Policy Planning Meeting, Department of Family Practice, UIHC Family Practice Conference Room, Dec. 20, 2017.

3. Herman RA: Panel Discussion: Other Committee Involvement in IRB Protocols. Human Research Protection Program Task Force, University of Iowa Vice President for Research, HLHS, Sept. 15, 2017.
4. Herman RA: Medical Cannabis use in Cancer – Current Iowa Regulations. Chemotherapy Subcommittee – Medical Cannabis, UIHC Holden Comprehensive Cancer Center, Jun 21, 2017.
5. Herman RA: Panel Discussion: Other Committees Involved in the IRB Review Process. IRB Education and Outcome Program, UIHC Braley Auditorium, Iowa City, IA May 1, 2017.
6. Herman RA: Update on the proposed Iowa legislation to replace the Cannabidiol Act with a more comprehensive Medical Cannabis Act. Ambulatory Care Pharmacy Noon Update, UIHC Melrose Dining Room, Iowa City, IA Mar. 26, 2015.
7. Joshi C and Herman RA: Report to the Iowa Legislature Cannabidiol Implementation Study Committee. A presentation on the Epidiolex® clinical trial underway at the University of Iowa. Presented at: Iowa State Capital, Legislative Dining Room, Des Moines, IA; Jan. 29, 2015.
8. Herman RA: Status of the Iowa Cannabidiol Act and implications for our patients. Ambulatory Care Pharmacy Noon Update, UIHC Melrose Dining Room, Iowa City, IA Jan. 8, 2015.
9. Herman RA: Report to the Iowa Board of Pharmacy Examiners, Marijuana Review Committee. Commented on the current review of medical evidence, reminded the Board of potential dangers of not knowing what is in products that might be used and reviewed current medical marijuana derivatives that are on the market, or currently being tested in the U.S. Presented at: Iowa Board of Pharmacy Examiners, Des Moines, IA; Nov. 7, 2014.
10. Joshi C and Herman RA: Report to the Iowa Legislature Cannabidiol Implementation Study Committee: Medical literature associated with the treatment of intractable epilepsy. Presented at: Iowa State Capital, Statehouse Room 116, Des Moines, IA; Sept. 11, 2014.
11. Carnahan RM, Herman RA. Mini-Sentinel Systematic Evaluation of Health Outcome of Interest Definitions for Studies Using Administrative Data - Transfusion-Associated Sepsis or Septicemia Report. [Report] Rockville, MD: FDA Mini-Sentinel Project, 2011. [6-14-2011] From: http://mini-sentinel.org/foundational_activities/related_projects/details.aspx?ID=132.
12. Herman RA, Gilchrist B, Link B, Carnahan R. Mini-Sentinel Systematic Evaluation of Health Outcome of Interest Definitions for Studies Using Administrative Data - Lymphoma Report. [Report] Rockville, MD: FDA Mini-Sentinel Project, 2011. [Cited 5-27-2011] Available from: http://mini-sentinel.org/foundational_activities/related_projects/details.aspx?ID=124.
13. Herman RA, Bohling K. Scientific Evidence Concerning Medical Marijuana Use. [Podium] Presented at: Iowa Board of Pharmacy Hearings on Medical Marijuana, University of Iowa, Iowa City, IA; Oct. 7, 2009.
14. Goedken AM and Herman RA: Determination of the Preferred Time to Send a Quality Assurance Survey. [Poster] Presented at: 6th Annual Research Achievement Day, College of Pharmacy Clinical and Administrative Division, University of Iowa, Iowa City, IA, Apr. 25, 2005.
15. Goedken AM and Herman RA: Determination of the Preferred Time to Send a Quality Assurance Survey. [Poster] Presented at: Interdisciplinary Health Group (IHG) Student Poster Session, University of Iowa, Iowa City, IA, Apr. 21, 2005.
16. Hirankarn S, Herman RA and Cowles MK: Excellent Predictive Performance by Hierarchical Bayesian Approach Using Gibbs Sampler in Population Analysis. [Poster] Presented at: 1st Annual Research Achievement Day, Univ. of Iowa College of Pharmacy, Iowa City, IA, May 10, 2000.
17. Hirankarn S, Downs C, Street WN, Min DI and Herman RA: Prediction of Two Ranges of

- Cyclosporine Level (Subtherapeutic and Toxic) Using Feature Subset Selection and Artificial Neural Networks. [Poster] Presented at: 1st Annual Research Achievement Day, University of Iowa College of Pharmacy, Iowa City, IA, May 10, 2000.
18. Cheng KJ and Herman RA: Neural Network Predicted Dose of Gentamicin in Burned Patients. [Poster] Presented at: 1st Annual Research Achievement Day, University of Iowa College of Pharmacy, Iowa City, IA, May 10, 2000.
 19. Hiranakarn S, Herman RA and Cowles MK: Excellent Predictive Performance by Hierarchical Bayesian Approach Using Gibbs Sampler in Population Analysis. [Poster] Presented at: 2nd Annual Student Interdisciplinary Health Poster Session, University of Iowa, Iowa City, IA, Apr. 14, 2000.
 20. Hiranakarn S, Downs C, Street WN, Min DI and Herman RA: Prediction of Two Ranges of Cyclosporine Level (Subtherapeutic and Toxic) Using Feature Subset Selection and Artificial Neural Networks. [Poster] Presented at: 2nd Annual Student Interdisciplinary Health Poster Session, University of Iowa, Iowa City, IA, Apr. 14, 2000.
 21. Cheng KJ and Herman RA: Neural Network Predicted Dose of Gentamicin in Burned Patients. [Poster] Presented at: 2nd Annual Student Interdisciplinary Health Poster Session, University of Iowa, Iowa City, IA, Apr. 14, 2000.
 22. Herman RA, Chang P, Rosenquist MD and Kealey GP: Stability and Potency of 0.1% Silver Sulfadiazine Slurry. [Poster] Presented at: College of Medicine Research Week, University of Iowa College of Medicine, Iowa City, IA, Apr. 13, 1998.
 23. Rosenquist MD, Herman RA, Chang P, Lewis RW and Kealey GP: Minimum Inhibitory Concentration of Mafenide Acetate Against Burn Wound Pathogens. [Poster] Presented at: College of Medicine Research Week, University of Iowa College of Medicine, Iowa City, IA, Apr. 13, 1998.
 24. Chang P, .Rosenquist MD, Herman RA and Kealey GP: Risk of Contamination of Topical Antimicrobial Mixtures with Repeated Use. [Poster] Presented at: College of Medicine Research Week, University of Iowa College of Medicine, Iowa City, IA, Apr. 13, 1998.
 25. Chang P, .Rosenquist MD, Herman RA, Lewis RW and Kealey GP: The Potency of Mafenide Acetate and Neosporin as Burn Wound Antimicrobials. [Poster] Presented at: College of Medicine Research Week, University of Iowa College of Medicine, Iowa City, IA, Mar. 31, 1997.