

CURRICULUM VITAE

Ronald R. Burnette

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EDUCATION:

University of California, San Francisco	Ph.D. 1982 in Pharmaceutical Chemistry
University of California, San Francisco	Pharm. D. 1979 in Pharmacy
Stanford University, Stanford, California	M.S. 1973 in Electrical Engineering
University of California, Irvine	B.S. 1971 in Electrical Engineering

MEMBERSHIPS:

- American Association of Pharmaceutical Scientists
- American Chemical Society - division of physical chemistry and computational chemistry

FACULTY APPOINTMENTS:

- Professor of Pharmaceutical Sciences at UW-Madison, July, 2011-.
- Associate Professor of Pharmaceutical Sciences at UW-Madison, 1988-June, 2011
- Assistant Professor of Pharmaceutical Sciences at UW-Madison, 1983-1988.
- Member of the Biophysics Faculty 1987-2008.

TEACHING:

- Outstanding Teacher of the Year. 1st Professional Year School of Pharmacy 1985-1989, 1993-1994, 1996-1998, 2000, 2004. (Total of 12 times).
- School of Pharmacy Teaching Innovation Award 2006.

SERVICE:

- University of Wisconsin-Madison Faculty Senate 1997-98, 1998-99, 1999-00, 2000-01, 2001-02, 2002-03. (Total of 6 times)
- Secretary for Sigma Xi, UW chapter 1994-95.
- Vice President Sigma Xi, UW chapter 1995-96.
- President for Sigma Xi, UW chapter 1996-97 and 1997-98.
- Board Member of the Complex Systems Group – Physics Department 1995-1998.

- Member of the National Advisory Committee for the National Magnetic Resonance Facility at Madison 1998-2003.
- Chair of Instrumentation Committee 2000 – 03.
- Co-Director of the School of Pharmacy Feynman Linux Cluster Computer Center for Computational Chemistry 2002-08.
- Associate Dean of Faculty Affairs 2006 to present.
- Vice Chair of Pharmaceutical Sciences 2007 to June 30, 2011.
- Self-Study Chair for School of Pharmacy Accreditation 2006.
- Member of Self-Study Coordinating Team for the 2011 School of Pharmacy Accreditation.
- Chair of Pharmaceutical Sciences July 1, 2011 to present.

RESEARCH:

ACADEMIC HONORS:

- Outstanding Paper Award given by the Society for Computer Simulation 1996.
- Invited speaker at the Fifth Japanese-American conference on pharmacokinetics and biopharmaceutics (JAPAN) (Summer 1990).
- Invited speaker at the Gordon Conference on the skin's barrier function (Summer 1989).
- Invited speaker at the American Association of Pharmaceutical Sciences meeting (Fall 1988).
- Invited speaker at the Controlled Release Society in Basel, Switzerland (Summer 1988).
- American Foundation for the Pharmaceutical Sciences Fellowship (AFPE) 1981-82.
- Regent's Fellowship, University of California, 1979-80.
- President's Undergraduate Fellowship, 1977-78: DNA-Drug Interactions
- President's Undergraduate Fellowship, 1970-71: Holographic Interferometry

GRADUATE STUDENTS TRAINED:

- Diana Marrero, M.S. 1985
- Harry Sharata, M.S., 1985
- Harry Sharata, Ph.D. 1986
- Cheryl Larrivee, M.S. 1989
- Boonsri Ongpipattanakul, M.S. 1988
- Boonsri Ongpipattanakul, Ph. D. 1991
- Shyue-Fang, M.S. 1992
- Sansana Boontaveekuk, M.S. 1992
- Shyue-Fang, Ph.D. 1993
- Lingyun Xiao, Ph.D. 2006
- Joe Sue, Ph.D. 2008

PUBLICATIONS:

1. Dosimetric effectiveness of targeted radionuclide therapy based on a pharmacokinetic landscape. Grudzinski JJ, Burnette RR, Weichert JP, Jeraj R. *Cancer Biother Radiopharm.* (2010) 25(4):417-26.
2. Tris(1,4,7,10-tetraoxacyclododecane)-di-lithium diperchlorate I.A. Guzei, L.C. Spencer, L. Xiao and R.R. Burnette *Acta Crystallographica Section E* 66(4) m438-m439. (2010).
3. 1,4,7,10-tetraoxacyclododecane-trideuteroacetonitrile-lithium perchlorate I.A. Guzei, L.C. Spencer, L. Xiao and R.R. Burnette *Acta Crystallographica Section E* 66(4) m440-m441. (2010).
4. Guzei, I. A., Su, J. W., Spencer, L. C., & Burnette, R. R. (4,7,13,16,21,24-hexaoxa-1,10-diazabicyclo[8.8.8]hexacosane)sodium perchlorate. *Acta Crystallogr., Sect. E Struct. Rep. Online*, E65(11), m1381-m1382, (2009).
5. Su, Joe and Burnette, Ronald. Investigation of Noncovalent Complexation with Hartree-Fock, Density Functional Theory, and Natural Bond Orbital Methods: a 222 Cryptand-Ion Binding Selectivity Study. *PhysChemPhys* Vol. 9, pages 1989-1996, (2008).
6. Narkar Y, Burnette RR, Albrecht R, Biehr R, Kandela A, Robinson JR. Evaluation of mucosal damage and recovery in the gastrointestinal tract of rats by a penetration enhancer. *Pharmaceutical Research* Vol. 25, No. 1, pages 25-38 (2008).
7. Ilia A. Guzei, Lara C. Spencer, Joseph W. Su, Ronald R. Burnette. Low temperature enantiotropic k2 phase transition in the ionic 222-cryptand complex with LiClO₄. *Acta Cryst.* B63, 93-100. (2007).
8. Burnette, Ronald R.; Weinhold, Frank. Determination of the conformation of 2-hydroxy, 2-amino benzoic dimers using ¹³C NMR and DFT/NBO analysis: The central importance of the carboxylic acid carbon. *Journal of Physical Chemistry A* Vol 110 (28); 8832-8839 (2006).
9. Statistical Properties of Thermodynamic quantities for cyclodextrin complex formation by Ronald R. Burnette and Kenneth A. Connors in *Journal of Pharmaceutical Sciences* Vol 89 Issue 11 NOV, 2000 pages 1389 – 1394.
10. Hsu, SF and Burnette, RR 1997. Characterization of the Effects of Amphotericin B on Ion Channels in MDCK Cells using the Patch-Clamp Technique. *Biochimica et Biophysica - Biomembranes* 1329:1, 26-38.
11. Burnette, Ronald R., 1996. Computer Simulation of Human Blood Flow and Vascular Resistance. *Computers in Biology and Medicine* 26:5, 363-369.
12. Hsu, S-F, Burnette, R. R. 1993. The effect of amphotericin B on the K-channel activity of MDCK cells. *Biochimica et Biophysica Acta* 1152: 189-191.
13. Burnette, R. R. 1992. Fundamental pharmacokinetic limits on the utility of using a sinusoidal drug delivery system to enhance therapy. *Journal of Pharmacokinetics and Biopharmaceutics*, 20 (5): 477-500.
14. Ongpipattanakul, B., Burnette, R. R., Potts, R. and Francoeur, M. 1991. Evidence that oleic acid exists in a separate phase within stratum corneum lipids. *Pharmaceutical Research*, 8 (3): 350-355.

15. Bagniefski, T. and Burnette, R. R. **1990**. A comparison of pulsed and continuous current iontophoresis. *Journal of Controlled Release*, 11: 113-122.
16. Burnette, R. R. and Bagniefski, T. M. **1988**. The influence of constant current iontophoresis on the impedance and passive permeability of excised nude mouse skin. *Journal of Pharmaceutical Sciences*, 77: 492-497.
17. Burnette, R. R. and Ongipattanakul, B. **1988**. Characterization of the pore transport properties and tissue alteration of excised human skin during iontophoresis. *Journal of Pharmaceutical Sciences*, 77: 132-137.
18. Sharata, H. H. and Burnette, R. R. **1988**. The effect of dipolar aprotic permeability enhancers on the basal stratum corneum. *Journal of Pharmaceutical Sciences*, 77: 27-32.
19. Burnette, R. R. and Ongipattanakul, B. **1987**. Characterization of the permselective properties of excised human skin during iontophoresis. *Journal of Pharmaceutical Sciences*, 76: 765-773.
20. Burnette, R. R. and Marrero, D. **1986**. Comparison between the iontophoretic and passive transport of thyrotropin releasing hormone across excised nude mouse skin. *Journal of Pharmaceutical Sciences*, 75: 738-743.
21. Hunt C. A., Burnette, R. R., MacGregor, R. D., Strubbe, A. E., Lau, D. T., Taylor, N. and Kawada, H. **1985**. Synthesis and evaluation of a prototypal artificial red cell. *Science*, 230: 1165-1167.
22. Burnette, R. R. **1984**. A Monte-Carlo model for the passive diffusion of drugs through the stratum corneum. *International journal of Pharmaceutics*, 22: 88-97.
23. Hunt CA, Burnette RR. **1984**. Lipid microencapsulation of hemoglobin. *Appl Biochem Biotechnol*. 1984;10:147-9.
24. Hunt CA, Burnette RR. **1983**. Neohemocytes. *Prog Clin Biol Res*. 122:59-69
25. Shafer, R. H., Burnette, R. R. and Mirau, P. A. **1980**. Spectrophotometric analysis of the equilibrium and kinetic DNA binding properties of several actinomycin analogs. *Nucleic Acids Research*, 8: 1121-1132.

BOOK CHAPTERS:

1. Burnette, Ronald R. **1998**. Pharmacokinetics and Dynamics of Temporal Delivery,. In Electronically Controlled Drug Delivery, Edited by Bret Berner and Steven M. Dinh. CRC Press, Boca Raton. 93-109.
2. Burnette, Ronald R. and DeNuzzio, John D. **1997**. Impedance Spectroscopy: Applications to Human Skin. In: Mechanisms of Transdermal Drug Delivery, Edited by R. Potts and R. Guy. Marcel Dekker, Inc., New York. 215-230.
3. Burnette, R. R. **1989**. Iontophoresis. In: Transdermal Delivery Systems: Problem Solving and other recent Developments, Edited by J. Hadgraft and R. H. Guy. Marcel Dekker, Inc., New York.
4. Burnette, R. R. **1986**. Theory of Mass Transfer. In: Sustained and Controlled Release Drug Delivery Systems, Edited by J. R. Robinson and V. Lee. Marcel Dekker, Inc., New York. 95-138.

5. Burnette, R. R. **1985**. Transdermal transport enhancement by use of iontophoresis. Proceedings of the Eleventh Annual Northeast Bioengineering Conference. Editors W. S. Kuklinski and W. J. Ohley: 45-57.

RECENT ABSTRACTS:

1. Central importance of water and associated hydrogen bonding interactions in the determination of acetaminophen's conformation in the crystal lattice by Ronald Burnette at the 42nd ACS Central Regional Meeting in Indianapolis, Indiana June 8-10, **(2011)**.
2. Analysis of the Modulation of Apparent Association Constants for Prototypical Crown Ether Drug Carriers in the Presence and Absence of H₂O Lingyun Xiao[†], Ilia A. Guzei[‡] and Ronald R. Burnette* FIP Pharmaceutical Sciences 2010 World Congress in Association with the AAPS Annual Meeting and Exposition, New Orleans, LA, United States, November 14 - 18, **(2010)**.
3. Burnette, Ronald R; and Xiao, Lingyun. NBO analysis of the conformational and energetic properties of the 1:1 benzo-12-crown-4 LiClO₄ complex in the gas and crystal phase. Abstracts of Papers, 234th ACS National Meeting, Boston, MA, United States, August 19-23, 2007 **(2007)**.
4. Su, Joe and Burnette, Ronald. ¹³C NMR chemical shielding: Probing conformational behavior of 222 cryptand in condensed phases. Abstracts of Papers, 234th ACS National Meeting, Boston, MA, United States, August 19-23, 2007 **(2007)**.
5. Su, Joe and Burnette, Ronald. Determination of 222 cryptand-ion binding selectivities with DFT Methods, NMR spectroscopy, and X-ray crystallography. Abstracts of Papers, 233th ACS National Meeting, Boston, MA, United States, March 25-29, 2007 **(2007)**.
6. Burnette, Ronald R.; Weinhold, Frank. Determination of the conformation of 2-hydroxy, 2-amino and 2-fluoro benzoic acid dimers in CDCl₃ using ¹³C NMR and DFT/NBO analysis: The central importance of the carboxylic acid carbon. Abstracts of Papers, 229th ACS National Meeting, San Diego, CA, United States, March 13-17, 2005 **(2005)**.
7. Xiao, Lingyun; Burnette, Ronald R.; Guzei, Ilia A. Characterization of drug and drug carrier interactions by using computational chemistry and X-ray crystallography. Abstracts of Papers, 229th ACS National Meeting, San Diego, CA, United States, March 13-17, 2005 **(2005)**.
8. Xiao, Lingyun; Burnette, Ronald R.. Characterization of crown ether and metal ion interactions by the use of computational chemistry and NMR spectroscopy. Abstracts of Papers, 225th ACS National Meeting, New Orleans, LA, United States, March 23-27, 2003 **(2003)**,
9. Burnette, Ronald R.; Weinhold, Frank. NBO analysis of ¹³C NMR chemical shifts of 2-amino, 2-hydroxyl, and monofluoro derivatives of benzoic acid. Abstracts of Papers, 225th ACS National Meeting, New Orleans, LA, United States, March 23-27, 2003 **(2003)**.
10. Burnette, Ronald R.. Characterization of an AOT/isooctane/water microemulsion in the L2 phase region where clustering occurs. Abstracts of Papers, 221st ACS National Meeting, San Diego, CA, United States, April 1-5, 2001 **(2001)**. This resulted in an invitation to the American Chemical Society symposium on "Probing Molecular Aqueous Environments in Chemistry and Biology" In San Diego, CA, Spring **(2001)**.