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## CURRICULUM VITAE

**William C. Zamboni, Pharm.D., Ph.D.**

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### PERSONAL INFORMATION

Office Address: Division of Pharmacotherapy and  
Experimental Therapeutics  
UNC Eshelman School of Pharmacy  
University of North Carolina at Chapel Hill  
1013 Genetics Medicine Building  
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### EDUCATION AND TRAINING

**Doctor of Philosophy** 2001 - 2005  
Clinical Pharmaceutical Scientist Program  
Dept. of Pharmaceutical Sciences, University of Pittsburgh,  
School of Pharmacy, Pittsburgh, PA. Dissertation was titled  
“Preclinical and Clinical Pharmacologic Studies of  
9-nitrocamptothecin and its 9-aminocamptothecin metabolite”.

**Research Fellowship** 1995 - 1997  
Department of Pharmaceutical Sciences  
St. Jude Children's Research Hospital, Memphis, TN.

**Oncology Pharmacy Residency** 1994 - 1995  
Warren G. Magnuson Clinical Center, National Institutes of Health, Bethesda, MD.

**Doctor of Pharmacy** 1992 - 1994  
University of Pittsburgh School of Pharmacy, Pittsburgh, PA.

**Bachelor of Science in Pharmacy** 1988 - 1992  
University of Pittsburgh School of Pharmacy, Pittsburgh, PA.

### PROFESSIONAL EXPERIENCE

#### ACADEMIC

#### Current Academic Positions at UNC:

**Professor** 2022 - Present  
Division of Pharmacotherapy and Experimental Therapeutics  
UNC Eshelman School of Pharmacy, University of North Carolina, Chapel Hill, NC.  
(Associate Professor from 2008 - 2022)

**Research Associate Professor** 2014 - Present  
Department of Pharmacology  
UNC School of Medicine, University of North Carolina, Chapel Hill, NC.

**Current Research Positions at UNC:**

**Director, UNC Advanced Translational Pharmacology** 2020 - Present  
and Analytical Chemistry (A-TPAC) Lab and Recharge Center.  
UNC Eshelman School of Pharmacy and UNC Lineberger  
Comprehensive Cancer Center, University of North Carolina, Chapel Hill, NC.

**Co-Faculty Director, Nanomedicines Characterizations Core** 2014 - Present  
UNC Eshelman School of Pharmacy, University of North Carolina, Chapel Hill, NC.

**Member, Center for Nanotechnology in Drug Delivery** 2014 - Present  
UNC Eshelman School of Pharmacy, University of North Carolina, Chapel Hill, NC.

**Member, Carolina Institute of Nanomedicine** 2012 - Present  
University of North Carolina, Chapel Hill, NC.

**Director, Analytical Chemistry and Pharmacology Core Lab** 2010 - Present  
UNC Lineberger Comprehensive Center.

**Director, Oncology Research and Drug Development Fellowship Program** 2009 - Present  
UNC Eshelman School of Pharmacy, University of North Carolina, Chapel Hill, NC.

**Director, Translational Oncology and Nanoparticle Drug Development** 2008 - Present  
Initiative (TOND<sub>2</sub>) Lab, UNC Eshelman School of Pharmacy and  
UNC Lineberger Comprehensive Cancer Center  
University of North Carolina, Chapel Hill, NC.

**Member, Molecular Therapeutics Program** 2008 - Present  
UNC Lineberger Comprehensive Cancer Center  
University of North Carolina, Chapel Hill, NC.

**Member, Center for Pharmacogenomics and Individualized Therapy** 2008 - Present  
University of North Carolina, Chapel Hill, NC.

**Prior Positions at UNC:**

**Associate Professor** 2008 - 2022  
Division of Pharmacotherapy and Experimental Therapeutics  
UNC Eshelman School of Pharmacy, University of North Carolina, Chapel Hill, NC.

**Co-Director, Mouse Phase I Unit** 2009 - 2015  
UNC Lineberger Comprehensive Cancer Center, Chapel Hill, NC.

**Co-Director, NC Biomedical Innovation Network** 2009 - 2012  
Research Triangle Park, NC.

**Member, Carolina Center of Cancer Nanotechnology Excellence** 2008 - 2020  
University of North Carolina, Chapel Hill, NC.

**Director, UNC GLP Bioanalytical Facility** 2008 - 2014

UNC Eshelman School of Pharmacy and UNC Lineberger  
Comprehensive Cancer Center, University of North Carolina, Chapel Hill, NC.

**Member, Center for Experimental Therapeutics** 2008 - 2010  
University of North Carolina, Chapel Hill, NC.

**Prior Positions Not at UNC:**

**Assistant Professor, Department of Obstetrics** 2007 - 2008  
**Gynecology, and Reproductive Sciences**  
**School of Medicine, University of Pittsburgh, Pittsburgh, PA.**

**Adjunct Clinical Instructor, Department of Pharmacy Practice** 2001 - 2013  
**School of Pharmacy, Duquesne University, Pittsburgh, PA.**

**Assistant Member, Molecular Therapeutics Drug Discovery Program** 1998 - 2008  
University of Pittsburgh Cancer Institute  
University of Pittsburgh Health System, Pittsburgh, PA.

**Assistant Professor, Department of Pharmaceutical Sciences** 1998 - 2008  
School of Pharmacy, University of Pittsburgh, Pittsburgh, PA.

**Assistant Professor, Division of Hematology-Oncology** 1998 - 2008  
Department of Medicine, School of Medicine  
University of Pittsburgh, Pittsburgh, PA.

**Assistant Professor, Department of Developmental Therapeutics** 1997 - 1998  
Greenebaum Cancer Center, University of Maryland, Baltimore, MD.

**Clinical Assistant Professor, Department of Pharmacy Practice and Science** 1997 - 1998  
School of Pharmacy, University of Maryland, Baltimore, MD.

**NON-ACADEMIC:**

**Current Positions:**

**CSO, Gloytics, LLC** 2016 - Present  
Company specializes in the evaluation of the bi-directional interaction between  
the immune system and drugs, nanoparticles, antibodies, ADCs and biological agents

**CSO, ChemoGLO, LLC** 2012 - Present  
Company specializes in the detection and removal of hazardous drugs  
in hospitals, laboratories and manufacturing facilities

**CEO, MediGLO, LLC** 2006 - Present  
Company focuses on medical, pharmaceutical and drug development consulting

Consultant, OBI Pharmaceuticals 2018 - Present

Consultant, GlaxoSmithKline 2019 - Present

Consultant, Eagle Pharmaceuticals 2020 - Present

Consultant, Adaptimmune Therapeutics 2020 - Present

Consultant, Akagera Medicines	2020 - Present
Consultant, Inimmune	2021 - Present
<b><u>Prior Positions:</u></b>	
<b>Member, Petersen Institute of NanoScience and Engineering</b> University of Pittsburgh, Pittsburgh, PA.	2006 - 2008
<b>Staff Pharmacist</b> Children's Hospital of Pittsburgh, Pittsburgh, PA.	1999 - 2006
<b>Staff Pharmacist</b> Pharmacy Department., NIH, Bethesda, MD.	1998 - 1998
<b>Staff Pharmacist</b> Veteran's Affairs Medical Center, Pittsburgh, PA.	1993 - 1994
<b>Staff Pharmacist</b> PRS Consultants, Latrobe, PA.	1992 - 1994
<b>Staff Pharmacist</b> Children's Hospital of Pittsburgh, Pittsburgh, PA.	1992 - 1994
<b>Staff Pharmacist</b> Rinehart's Pharmacy, Nanty Glo, PA.	1992 - 1992
Consultant, Syros Pharmaceuticals	2017 - 2021
Consultant, BlueLink Pharmaceuticals	2017 - 2020
Consultant, Elipses Pharma	2020
Consultant, Merrimack Pharma	2013 - 2019

### **LICENSURE AND CERTIFICATION**

Pharmacy License (Pennsylvania #RP039278L)	1992 - Present
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### **HONORS AND AWARDS**

Triangle Business Journal BDO Life Sciences Award – Outstanding Biotech Company (ChemoGLO, LLC) from a Research University	2015
American College of Clinical Oncology Aventis Oncology Fellowship entitled "Evaluation of the Tumor Disposition of Cisplatin using Microdialysis in Patients with Melanoma."	2001
Phi Delta Chi Distinguished Alumni Award American College of Clinical Pharmacy Rhone-Poulenc Rorer 1999 Oncology Research Award entitled "Disposition of Liposomal-Cisplatin (SPI-77) and Cisplatin in Solid Tumors"	1999
American College of Clinical Pharmacy Rhone-Poulenc Rorer 1996-97 Oncology Fellowship Research Project entitled: "Cerebrospinal Fluid (CSF) Disposition of Topoisomerase I Inhibitors in the Nonhuman Primate Model"	1997

American Society of Clinical Oncology 1997 Merit Award for the presentation entitled: "Pharmacokinetically Guided Dose Adjustment Reduces Variability in Topotecan (TPT) Systemic Exposure in Children with Solid Tumors".	1997
American College of Clinical Oncology Phone-Poulenc Rorer Oncology Fellowship entitled "Cerebrospinal Fluid (CSF) Disposition of Topoisomerase I Inhibitors in a Nonhuman Primate Model"	1996
American Society of Clinical Oncology 1996 Merit Award for the presentation entitled: "Pharmacokinetics (PK) of Topotecan (TPT) in Pediatric Patients with Normal and Altered Renal Function".	1996
Magna Cum Laude, Doctor of Pharmacy Program, University of Pittsburgh	1994
University of Pittsburgh Alumni Association Graduate Scholarship	1993
University of Pittsburgh Honors Convocation Honoree	1992
Eli Lilly Achievement Award for Ethics, Scholarship and Leadership	1992
University of Pittsburgh University Scholar	1992
Magna Cum Laude, University of Pittsburgh School of Pharmacy	1992
University of Pittsburgh Student Leadership Honor Society	1992
Emma W. Locke Memorial Award Nominee	1992
Omicron Delta Kappa National Leadership Honor Society	1992
Rho Chi Pharmacy Honor Society	1991
University of Pittsburgh Honors Convocation Honoree	1991

## **BIBLIOGRAPHY**

### **PATENTS**

1. High molecular weight free PEG for minimizing anti-PEG antibody-mediated accelerated blood clearance of PEGylated therapeutics. By Sam Lai, Yanguang Cao, Greg Forest, Morgan McSweeney, Timothy Wessler, and William Zamboni. Patent Application No. 62/850,547; 16/642,722. PCT/US 2018/048126.
2. System and Method for Hazardous Drug Surface Cleaning. By William Zamboni, Tom O'Neill, and Stephen Eckel. Patent Application No. 61/788,426. File on April 3, 2020. Refiled on March 15, 2020. Granted Jan 10 , 2022.

### **PUBLICATIONS**

A summary of all of my publications to present according to Web of Science (as of 03.01.21) is as follows:

- Total publications = 193
- H-score = 39
- Average citation per item = 28.51
- Sum of times cited = 5,502 [without self-citations = 4,956]
- Citing Articles = 4,355 [without self-citations = 4,247]

Students and fellows under my direction are indicated by an asterisk.

### **Chapters or Review Articles**

## **Published or in Press**

1. Lucas AT, Moody A\*, Schorzman AN, **Zamboni WC**. Importance and Considerations of Antibody Engineering in Antibody-Drug Conjugates Development from a Clinical Pharmacologist's Perspective. *Antibodies (Basel)*. 2021 Jul 26;10(3):30. doi: 10.3390/antib10030030. PMID: 34449544; PMCID: PMC8395454.
2. Moody AS\*, Dayton P, Lucas AT, **Zamboni WC**. Imaging methods to evaluate tumor microenvironment factors affecting drug delivery and predict antitumor response. *Overcome Cancer Drug Resistance by Nano-carrier Drug Delivery System*. Editor: Vladimir P. Torchilin. *Cancer Drug Resist*. 2021;4:382-413. doi: 10.20517/cdr.2020.94. Epub 2021 Jun 19.
3. Piscitelli JA\*, Ban Jisun\*, Lucas AT, **Zamboni WC**. Complex factors and challenges that affect the pharmacology, safety and efficacy of Nanocarrier Drug Delivery Systems. *Overcome Cancer Drug Resistance by Nano-carrier Drug Delivery System*. *Pharmaceutics*. 2021; 13(1): 114.
4. Lucas AT\*, Robinson R, Schorzman AN, Piscitelli J\*, Razo J\*, **Zamboni WC**. Pharmacologic considerations in the disposition of antibodies and antibody-drug conjugates in preclinical models and in patients. *Antibodies*. 2019; 8(1): 3. doi: 10.3390/antib8010003. PMID: 31544809.
5. **Zamboni WC**, Szebeni J, Kozlov V, Lucas AT, Piscitelli JA\*, Dobrovolskaia MA. Animal Models for Analysis of Immunological Responses to Nanomaterials: Challenges and Considerations. *Adv Drug Deliv Rev*. 2018 Nov - Dec;136-137:82-96. PMID: 30273617.
6. Lucas AT, Price LSL\*, Schorzman AN, Storrie M\*, Piscitelli JA\*, Juan Razo, **Zamboni WC**. "Factors affecting the pharmacology of antibody-drug conjugates". *Antibodies*. 2018; 7(1): 10. doi: 10.3390/antib7010010. PMID: 31544862
7. Schorzman AN, Lucas AT\*, Kagel JK\*, **Zamboni WC**. Methods and Study Designs for Characterizing the Pharmacokinetics and Pharmacodynamics of Carrier-Mediated Agents. *Methods Mol Biol*. 2018;1831:201-228. PMID: 30051434.
8. Lucas AT\*, Price LS\*, Schorzman AN, **Zamboni WC**. Complex effects of tumor microenvironment on the tumor disposition of carrier-mediated agents. Invited review, *Nanomedicine*. 2017;12(16):2021-2042. PMID: 28745129.
9. Tyson R\*, Osa L\*, Madden AJ\*, Lucas AT\*, **Zamboni WC**. *Preclinical and Clinical Pharmacology Studies of Nanoparticles: The Translational Challenge*. *Nanopharmacy*, 1<sup>st</sup> Edition, Wileys. 2017.
10. Tamarkin L, Yuan Z, Maggi EC, Adem A, Schorzman AN, **Zamboni WC**, Oarr D, Libutti SK. *Cancer Nanomedicines: Opportunities and Challenges*. *Biotech, Biomaterials and Biomedical - TechConnect Briefs*. 2017; 3:126-129.
11. Proctor AE, **Zamboni WC**. Ovarian cancer. In: Schwinghammer TL et al, eds. *Pharmacotherapy Casebook: A Patient-Focused Approach*. 10th ed. New York: McGraw-Hill, 2017.
12. Lucas AT\*, Madden AJ\*, **Zamboni WC**. Challenges in preclinical to clinical translation for anticancer carrier-mediated agents. Invited Review. *Wiley Interdiscip Rev Nanomed Nanobiotechnol*. 2016 Sep;8(5):642-53. PMID: 26846457.
13. **Zamboni WC**. Pharmacokinetic and Pharmacodynamic Characterization of Nanotherapeutics, NCI Cancer Nanotechnology Plan 2015. <https://www.cancer.gov/nano/research/plan/cananoplan-2015-complete.pdf>.
14. Lucas A\*, Madden A\*, **Zamboni WC**. Formulation and physiological factors affecting the pharmacology of carrier-mediated agents. *Expert Opin Drug Metab Toxicol*. 2015;11(9):1419-33. PMID: 26173794.
15. O'Neal S, Lucas A\*, Caron WP\*, Song G\*, Lay JC, **Zamboni WC**. Bidirectional Interaction Between Nanoparticles and Carrier-Mediated Agents and the Cells of the Mononuclear Phagocyte System. In: Dobrovolskaia M, editor. *Immunological Properties of Engineered Nanomaterials*. Second Edition. World Scientific. ISBN: 978-981-4699-16-7. 2015.
16. Petschauer JS, Madden AJ, Kirschbrown WP, Song G, **Zamboni WC**. The effects of nanoparticle drug loading on the pharmacokinetics of anticancer agents. *Nanomedicine (Lond)*. 2015 Feb;10(3):447-63. doi: 10.2217/nnm.14.179. PubMed PMID:25707978.

17. Bartlett JA, Brewster M, Brown P, Cabral-Lilly D, Cruz CN, David R, Eickhoff WM, Haubenreisser S, Jacobs A, Malinoski F, Morefield E, Nalubola R, Prud'homme RK, Sadrieh N, Sayes CM, Shahbazian H, Subbarao N, Tamarkin L, Tyner K, Uppoor R, Whittaker-Caulk M, **Zamboni W**. Summary report of PQRI Workshop on Nanomaterial in Drug Products: current experience and management of potential risks. *AAPS J*. 2015 Jan;17(1):44-64. doi: 10.1208/s12248-014-9701-9. Epub 2014 Nov 25. PubMed PMID:25421459; PubMed Central PMCID: PMC4287304.
18. Gabizon A, Bradbury M, Prabhakar U, **Zamboni W**, Libutti S, Grodzinski P. Cancer nanomedicines: closing the translational gap. *Lancet*. 2014 Dec 20;384(9961):2175-6. PMID: 25625382.
19. Song G, Petschauer JS, Madden AJ, **Zamboni WC**. Nanoparticles and the mononuclear phagocyte system: pharmacokinetics and applications for inflammatory diseases. *Curr Rheumatol Rev*. 2014;10(1):22-34. PubMed PMID: 25229496.
20. Smith M, Brown J, **Zamboni WC**, Walker N. Symposium Overview: From immunotoxicity to nanotherapy: the effects of nanomaterials on the immune system. *Toxicol Sci*. 2014 Apr;138(2):249-55. PMCID: PMC3988451.
21. Kam TC, **Zamboni WC**. Ovarian Cancer. In: Schwinghammer TL and Koehler JM, eds. *Pharmacotherapy: A Patient-Focused Approach*, 9th edition, McGraw-Hill, 2013.
22. Prabhakar U, Maeda H, Jain R, Sevick-Muraca E, **Zamboni W**, Barry S, Gabizon A, Grodzinski P, Blakey D. Challenges and key considerations of the enhanced permeability and retention effect (EPR) and nanomedicine drug delivery in oncology. *Cancer Research*. 2013;73(8):2412-7. PubMed Central: PMC3916009.
23. Kumar P\*, Caron WP\*, Song G\*, Rawal S, **Zamboni WC**. Nanoparticle Effects on the Interaction with Cells of the Mononuclear Phagocytic System. In: Dobrovolskaia M, editor. *Immunological Properties of Engineered Nanomaterials*. First Edition. World Scientific 2013.
24. Caron WP\*, Song G\*, Kumar P\*, Rawal S\*, **Zamboni WC**. Pharmacokinetic and Pharmacodynamic Disposition of Carrier-Mediated Agents. *Clin Pharmacol Ther*. 91(5);802-12:2012.
25. **Zamboni WC**, Torchilin V, Patri A, Hrkach J, Lee R, Stern S, Nel A, Malghan S, Panaro N, Grodzinski P. Best Practices in Cancer Nanotechnology: Perspectives from NCI Nanotechnology Alliance. *Clinical Cancer Research*. *Clin Cancer Res*. 18(12);3229-41:2012. PubMed Central: PMC3916007.
26. Song G\*, Wu H\*, Yoshino K, **Zamboni WC**. Factors affecting the Pharmacokinetic and Pharmacodynamic Disposition of Liposomal Agents. *J Liposomal Res*. 22(3);177-92:2012.
27. **Zamboni WC** and La I\*. Carrier-mediated and targeted cancer drug delivery. In: Armstrong D, editor. *Oxidative Stress in Applied Basic Research and Clinical Practice*. First Edition. Springer Science. Part 5, 427-452, 2012.
28. Combest AJ\*, **Zamboni WC**. Use of microdialysis in preclinical and clinical development of anticancer agents. In *Handbook of Anticancer Agents: Pharmacokinetics and Pharmacodynamics*, 2<sup>nd</sup> Edition. Springer Science and Business Media, New York, NY; 2010, 2011.
29. La-Beck\*, Walsh MD\*, **Zamboni WC**. Ovarian Cancer. In: Schwinghammer TL and Koehler JM, eds. *Pharmacotherapy: A Patient-Focused Approach*, 8th edition, McGraw-Hill, 2011.
30. Sparreboom A and **Zamboni WC**. Camptothecin Analogues. In Chabner BA and Longo DL, editors. *Cancer Chemotherapy and Biotherapy: Principles and Practice*, Fourth Edition, Lippincott Williams & Wilkins, 2011.
31. **Zamboni WC**, Yoshino K, Formulation and Physiologic Factors Affecting the Pharmacokinetics and Pharmacodynamics of Liposomal Agents. *Drug Delivery Systems*. 25(1);58-70:2010.
32. La-Beck NM\*, **Zamboni WC**. Pharmacokinetics and pharmacodynamics of nanoparticle anticancer agents. *NCI Alliance for Nanotechnology in Cancer Bulletin* 3(1);3-6:2009.
33. **Zamboni WC** and Tonda M. Ovarian Cancer. In: Dipro J, Talbert R, Matzke G, Posey L, editors. *Pharmacotherapy: A Pathophysiological Approach*, Seventh Edition, McGraw-Hill, 2008.
34. **Zamboni WC**. Concept and Clinical Evaluation of Nanoparticle and Nanosome Anticancer Agents. *The Oncologist* 13(3);248-60:2008.

35. Waddell JA, Adel NG, Almuete V, Ignoffo R, Medina PJ, Kuhn JC, Solimando DA, **Zamboni WC**. New treatments for the management of treatment-experienced breast cancer: examining the evidence. *Advanced Studies in Pharmacy* 4(13);2007.
36. **Zamboni WC**. Tumor Targeted Delivery of Drugs for the Treatment of Cancer. In: Prakash S, eds. *Artificial Cell, Cell Engineering and Therapy*, First Edition, Woodhead Publishing Limited, Cambridge, UK. 2007.
37. **Zamboni WC**. Liposomal, nanoparticle, conjugated formulations of anticancer agents. Invited Review. *Clin Cancer Res* 11(23);8230-4:2005.
38. Sparreboom A, **Zamboni WC**. Topoisomerase I Inhibitors. In Chabner BA and Longo DL, editors. *Cancer Chemotherapy and Biotherapy: Principles and Practice*, Fourth Edition, Lippincott Williams & Wilkins, 2005.
39. **Zamboni WC**, Jung L, Tonda M. Ovarian Cancer. In: Dipro J, Talbert R, Matzke G, Posey L, editors. *Pharmacotherapy: A Pathophysiological Approach*, Sixth Edition, McGraw-Hill, 2005.
40. **Zamboni WC**, Jung L, Tonda M. Ovarian Cancer. In: Schwinghammer T, eds. *Pharmacotherapy: A Patient-Focused Approach*, Sixth edition, McGraw-Hill, 2005.
41. **Zamboni WC**. Use of microdialysis in preclinical and clinical development. In: Figg WD, McLeod H, editors. *Handbook of Pharmacokinetics and Pharmacodynamics of Anti-Cancer Drugs*, First edition. Humana Press. 2004.
42. **Zamboni WC**. An overview of the pharmacokinetic disposition of PEG-GCSF. *Pharmacotherapy*, 23(8 Pt 2):9S-14S,2003.
43. **Zamboni WC** and Stewart CF. An overview of the pharmacokinetics disposition of darbapoetin. *Pharmacotherapy*. 22(9):133S-140S;2002.
44. Jung LJ\* and **Zamboni WC**. Cellular, pharmacokinetic, and pharmacodynamic aspects of response to camptothecins: can we improve it? *Drug Resistance Updates*. 4(4):273-88;2001.
45. **Zamboni WC**, Jung L\*, Tonda M. Ovarian Cancer. In: Schwinghammer T, Yee G, editors. *Pharmacotherapy: A Patient-Focused Approach*, Fifth edition. McGraw & Hill. 2001.
46. **Zamboni WC**, Jung L\*, Tonda M. Ovarian Cancer. In: Dipro J, Talbert R, Matzke G, Posey L, editors. *Pharmacotherapy: A Pathophysiological Approach*, Fifth Edition. McGraw & Hill. 2001.
47. **Zamboni WC**, Tonda ME. New designs of clinical trials. *Highlights in Oncology Practice*, 18(1):2-7, 2000.
48. **Zamboni WC** and Trovato JA. Ovarian Cancer. In: Schwinghammer T, Yee G, editors. *Pharmacotherapy: A Patient-Focused Approach*, Second edition. Appleton & Lange. 1999.
49. **Zamboni WC** and Goldspiel B. Ovarian Cancer. In: Dipro J, Talbert R, Matzke G, Posey L, editors. *Pharmacotherapy: A Pathophysiological Approach*, Fourth Edition. 1999.
50. Stewart CF, **Zamboni WC**. Plasma Protein Binding of Chemotherapeutic Agents. In Grochow L, Ames M, editors. *Pharmacokinetics and Pharmacodynamics of Anticancer Agents*, Second Edition. 1998.
51. Masson E, **Zamboni WC**. Pharmacokinetic Optimization of Cancer Chemotherapy: Effect on Outcomes. *Clin Pharmacokinetics*. 32(4);324-343:1997.
52. **Zamboni WC**. Fruits of the Yew (Ovarian Cancer). In: Schwinghammer T, Yee G, editors. *Pharmacotherapy: A Patient-Focused Approach*, First edition. Appleton & Lange, 1996.
53. **Zamboni WC** and Goldspiel B. Ovarian Cancer. In: Dipro J, Talbert R, Hayes P, Matzke G, Posey L, editors. *Pharmacotherapy: A Pathophysiological Approach*, Third Edition. Appleton & Lange, 1996.

#### **Submitted:**

1. Lucas AT, Moody AS\*, Schorzman AN, **Zamboni WC**. Importance and considerations of antibody engineering in antibody-drug conjugates development from a clinical pharmacologist's perspective. Submitted to *Antibodies* in Feb 2021.

#### **Peer Reviewed Articles**



Students and fellows under my direction are indicated by an asterick.

**Published or In Press:**

1. Dahl DK, Whitesell AN, Sharma-Huynh P, Maturavongsadit P, Januszewicz R, Fox RJ, Loznev HT, Button B, Schorzman AN, **Zamboni W**, Ban J, Montgomery SA, Carey ET, Rahima Benhabbour S. A mucoadhesive biodissolvable thin film for localized and rapid delivery of lidocaine for the treatment of vestibulodynia. *Int J Pharm.* 2022 Jan 25;612:121288. doi: 10.1016/j.ijpharm.2021.121288. Epub 2021 Nov 17. PMID: 34800616; PMCID: PMC8753993.
2. Price L\*, Rivera J, Madden A\*, Herity L\*, Piscitelli J\*, Mageau S\*, Santos D, Roques J, Midkiff B, Nikolaishvili-Feinberg N, Darr D, Chang S, **Zamboni W**. Minibeam radiation therapy enhanced tumor delivery of PEGylated liposomal doxorubicin in a triple negative breast cancer mouse model. Resubmitted to *Ther Adv in Med Oncol.* 2021 Oct 29;13:17588359211053700. doi: 10.1177/17588359211053700. PMID: 34733359; PMCID: PMC8558804.
3. Benhabbour SR, Prasher A, Shrivastava R, Dahl D, Sharma-Huynh P, Pridgen T, Schorzman AN, Ban J\*, **Zamboni WC**, Blikslager AT, Dellon ES. Steroid eluting esophageal-targeted drug delivery devices for treatment of eosinophilic esophagitis. *Polymers.* 2021 Feb 13;13(4):557. doi: 10.3390/polym13040557. PMID: 33668571; PMCID: PMC7917669.
4. Piha-Paul SA, Thein KZ, De Souza P, Kefford R, Gangadhar T, Smith C, Schuster S, **Zamboni WC**, Dees CE, Markman B. First-in-human, phase I/II study of CRLX301 in patients with advanced or metastatic solid malignancies. *Invest New Drugs.* 2021 Aug;39(4):1047-1056. doi: 10.1007/s10637-021-01081-x. Epub 2021 Feb 16. PMID: 33594602.
5. Duska L, O'Malley DM, Krasner C, Schilder RJ, Mathews C, Moore K, Thaker P, Miller A, Prudy C, Leyco AJ, Smith C, Mercier D, Tennant L, Kennedy E, Vahanian N, Lucas AT, **Zamboni WC**, Link C. A Phase Ib/II and pharmacokinetic study of EP0057 (formerly CRLX101) in combination with weekly paclitaxel in patients with recurrent or persistent epithelial ovarian, fallopian tube, or primary peritoneal cancer. *Gynecol Oncol.* *Gynecol Oncol.* 2021 Mar;160(3):688-695. doi: 10.1016/j.ygyno.2020.12.025. Epub 2020 Dec 31. PMID: 33390325.
6. Hwang D, Dismuke T, Rosen EP, Kagel JR, Lim C. **Zamboni WC**, Kabanov AV, Gershon TR, Sokolsky-Papkov M. Nanoparticle formulation improves the delivery and efficacy of vismodegib for brain tumor therapy in a GEMM of sonic hedgehog driven medulloblastoma. *Nanomedicine.* 2021 Feb;32:102345. doi: 10.1016/j.nano.2020.102345. Epub 2020 Nov 28. PMID: 33259959; PMCID: PMC8160025.
7. Price LSL\*, Stern ST, Deal AM, Kabanov AV, **Zamboni WC**. A Reanalysis of Nanoparticle Tumor Delivery Using Classical Pharmacokinetic Metrics. *Science Advances.* 15 Jul 2020; Vol. 6, no. 29, eaay9249. DOI: 10.1126/sciadv. aay9249. PMID: 32832614 PMCID: PMC7439617.
8. Zhu J, Beechinor RJ, Thompson T, Schorzman AN, **Zamboni W**, Crona DJ, Weiner DL, Tarantino LM. Pharmacokinetic and pharmacodynamic analyses of cocaine and its metabolites in behaviorally divergent inbred mouse strains. *Genes Brain Behav.* 2020 May 8:e12666. doi: 10.1111/gbb.12666. PMID: 32383297.
9. Graham-Gurysh EG, Moore KM, Schorzman AN, Lee T\*, **Zamboni WC**, Hingtgen SD, Bachelder EM, Ainslie KM. Tumor responsive and tunable polymeric platform for optimized delivery of paclitaxel to treat glioblastoma. *ACS Appl Mater Interfaces.* 2020 Apr 29;12(17):19345-19356. PMID: 32252517.
10. Parker CL, McSweeney MD, Lucas AT, Jacobs TM, Wadsworth D, **Zamboni WC**, Lai SK. Pre-targeted delivery of PEG-coated carriers to breast tumors using multivalent, bispecific antibody against polyethylene glycol and HER2. *Nanomedicine.* 2019 Oct; 21:102076. PMID: 31394261.
11. Salch SA, **Zamboni WC**, Zamboni BA, Eckel SF. Patterns and characteristics associated with the surface contamination of hazardous drugs in hospital pharmacies. *Am J Health Syst Pharm.* 2019 Apr 17;76(9):591-598. PMID: 31361828.

12. Taylor SE, Ruosha L, Petschauer JS\*, Donovan H, Schorzman A, Razo J\*, **Zamboni WC**, Edwards RP, Zorn KK. Phase I study of intravenous oxaliplatin and intraperitoneal docetaxel in recurrent ovarian cancer. *Internat J of Gynecologic Cancer*. 2019 Jan;29(1):147-152. PMID: 30640697.
13. Starling BR\*, Kumar P\*, Lucas A\*, Barrow D, Farnan L, Song G\*, Bae-Jump V, Gehrig P, Bensen J, **Zamboni WC**. Mononuclear phagocyte system function and nanoparticle pharmacology in obese and normal weight ovarian and endometrial cancer patients. *Cancer Chemother Pharmacol*. 2019 Jan;83(1):61-70. PMID: 30327876.
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#### **Submitted or Resubmitted:**

1. Lucas AT, Price LSL\*, Santos CM, Perou C, Kabanov AV, **Zamboni WC**. Fibroblast-mediated increase in tumor density is associated with reduced nanoparticle tumor delivery and efficacy. Submitted to *Science Advances*, June 2021.
2. Lucas AT, Beaudoin JJ\*, Herity L\*, Razo\*, Sketch M, Price LSL\*, **Zamboni WC**. Pharmacokinetic and allometric scaling studies of nanoparticle formulations of anthracyclines. Submitted to *Journal of Pharmacokinetics and Pharmacodynamics*, Dec 2020.
3. Madden AJ\*, Price LSL\*, Sandison KL\*, White TF\*, Santos CM, O'Neil S, Fitch RM, McGee W, Miller R, **Zamboni WC**. The effect of dose of actively and passively targeted PEGylated liposomal formulations of cisplatin on tumor delivery and interaction with tumor associated macrophages. Submitted to *Nanomedicine NBM*, July 2020.
4. Bowerman CJ, Perry J, Chu KS, Keeler AW\*, O'Neil SK, Sherwood CA\*, Haithcock LP, Luft JC, Napier ME, **Zamboni WC**, DeSimone JM. Pharmacokinetics and biodistribution of PLGA nanoparticles determined by inductively coupled plasma mass spectroscopy. Submitted to *Nano Letters*, May 2019.
5. Brickey WJ, Caudell DL, Macintyre AN, Olson JD, Dugan GO, Bourland JD, Tooze JA, Gou H, French MN, Schorzman AN, **Zamboni WC**, Sempowski GD, Chao NJ, Cline JM, Ting JPY. The TLR2/6 ligand FSL-1 mitigates radiation-induced hematopoietic injury in nonhuman primates. Submitted to *PNAS*, Dec 2021.

#### **In Preparation:**

1. Ghamande SA, Odunsi K, Combest AJ\*, Walko CW, Hoskins J, Bridges A, Lele S, Macfee M, Rodabaugh K, Thomas B, McLeod H, **Zamboni WC**. A Phase II, pharmacologic and pharmacogenetic study of weekly docetaxel in patients with platinum resistant ovarian cancer.
3. Hwang JJ, **Zamboni WC**, Malik S, Hansen N, Strychor S, Zamboni BA, Sidone BJ\*, Marshall JL. Phase I and pharmacokinetic study of weekly docetaxel and oxaliplatin in patients with advanced solid tumors.
4. Lucas AT, Santos CM, Kabanov AV, **Zamboni WC**, Bronich TK. Pharmacology of variably-loaded tri-block co-polymer formulations of cisplatin in a genetically engineered mouse model of triple negative breast cancer. (Plan to submit to *Journal of Controlled Release*).
5. Whitehead Z, Lucas AT, Zamboni BA, Bae-Jump V, Gehrig P, **Zamboni WC**. Effect of obesity on the efficacy and toxicity of PEGylated liposomal doxorubicin in patients with platinum refractory ovarian cancer. (Plan to submit to *Gynecologic Oncology*).

#### **Abstracts and Scientific Presentations At Meetings**

Students and fellows under my direction are indicated by an asterisk.

#### **Published or Accepted:**

1. Johannessen L, Hu S, Ke N, D'Ippolito A, Rajagopal N, Savinainen A, **Zamboni W**, Hodgson G. Preclinical evaluation of PK, PD, and anti-tumor activity of the oral, non-covalent, potent and highly selective CDK7 inhibitor, SY-5609, provides rationale for clinical development in multiple solid tumor indications. AACR-NCI-EORTC 2019 #C091.
2. Starling BR, Kumar P, Lucas AT, Barrow D, Farnan L, Hendrix L, Giovinazzo H, Song G, Gehrig P, Bae-Jump V, Bensen JT, **Zamboni WC**. The effect of body habitus on the innate immune system and pharmacology of carrier-mediated agents and biologics. Interdisciplinary Nutrition Sciences Symposium 2019.
3. Madariaga A, O'Malley DM, Thacker PH, Wenham RM, Mehta A, Bowering V, Cao L, **Zamboni WC**, Nixon A, Bedard P, Wang L, Hassan R, Siu L, Moscow J, Lheureux S. A randomized phase II study of bevacizumab and either weekly anetumab ravtansine or weekly paclitaxel in platinum-resistant or refractory ovarian cancer. Submitted to ASCO TIPS 2019.
4. Juric D, Papadopoulos K, Tolcher A, Do K, Orlando D, **Zamboni W**, Hodgson G, di Tomaso E, Stephens K, Roth D, Shapiro G. Proof-of-Mechanism Based on Target Engagement and Modulation of Gene Expression Following Treatment with SY-1365, a First-in-Class Selective CDK7 Inhibitor in Phase 1 Patients with Advanced Cancer. EORTC-NCI-AACR Conference 2018.
5. Kirschbrown WP, Lucas AT, **Zamboni WC**, Garg A. Biomarkers of Fc-gamma receptors (FcγRs) on Mononuclear Phagocyte System (MPS) Cells in Blood of Patients with Advanced Gastric Cancer are upregulated as compared to Patients with Metastatic Breast Cancer. EORTC-NCI-AACR Conference 2018.
6. Price LP, Stern S, Kabanov A, **Zamboni WC**. Evaluating the efficiencies and deficiencies of nanoparticle tumor delivery and disposition. Annual Investigators' meeting of the NCI Alliance for Nanotechnology in Cancer 2018.
7. Beaudoin JJ\*, Herity LB\*, Razo J\*, Price LSL\*, Sketch MR, Kabanov AV, Lucas AT, **Zamboni WC**. Pharmacokinetic and Allometric Scaling Studies of Nanoparticle Formulations of Anthracyclines. GPEN 2018.
8. Chang SX, Rivera JN, Price LSL\*, Herity LB\*, Madden AJ\*, Roques JR, Santos C, Darr D, **Zamboni WC**. Pharmacokinetic (PK) and pharmacodynamic (PD) studies of PEGylated liposomal doxorubicin (PLD) enhanced delivery to tumors after microbeam radiation therapy (MRT) compared with broadbeam radiation therapy (BRT) in a triple negative breast cancer mouse model. NCI CCNE PI Meeting 2017.
9. Price LSL\*, Stern ST, Kanaby MC\*, Eve SG\*, Deal AM, Kabanov AV, **Zamboni WC**. Evaluation of nanoparticle drug delivery to tumors: Effects of pharmacokinetic study design and metrics on liposomal delivery to tumors. NCI CCNE PI Meeting 2017.
10. Lucas AT\*, Herity LB\*, Kornblum ZA, Madden AJ\*, Gabizon A, Layko D, Kabanov AV, Ajamie T, Bender DM, Kulanthaivel P, Sanchez-Felix MV, Havel HA, **Zamboni WC**. Use of mononuclear phagocyte platforms to characterize nanomaterials, nanoparticles and colloids. FIP/USP/AAPS Workshop on Nanomedicines – Technical and Regulatory Perspectives 2017.
11. McSweeney MD, Price LSL\*, Herity LB\*, Wessler T, Cao Y, Forest MG, **Zamboni WC**, Lai SK. The impact of anti-PEG antibodies on the pharmacokinetics and biodistribution of Doxil *in vivo* and *in silico*. Submitted to the Keystone Conference on Immunology.
12. Chang SX, Rivera JN, Herity LB\*, Price LSL\*, Madden AJ\*, Roques JR, Santos C, Darr D, **Zamboni WC**. Comparison of microbeam versus conventional broadbeam radiation therapy on tumor delivery enhancement of PEGylated liposomal doxorubicin in a triple negative breast cancer mouse model. AACR 2017. Cancer Res 2017;77(13 Suppl): Abstract nr 5051. doi:10.1158/1538-7445.AM2017-5051.
13. Salch S\*, **Zamboni WC**, Eckel SE. Identifying pharmacy practice patterns and predictors associated with surface contamination of hazardous drugs in pharmacies: a descriptive summary of five commonly used antineoplastic agents. ASHP 2016.
14. Lucas AT\*, Herity LB\*, Kornblum ZA, Madden AJ\*, Gabizon A, Layko D, Kabanov AV, Ajamie T, Bender DM, Kulanthaivel P, Sanchez-Felix MV, Havel HA, **Zamboni WC**. Pharmacokinetic and screening studies

of the interaction between mononuclear phagocyte system and nanoparticle formulations and colloid forming drugs. 2016 ACCP Annual Meeting. #41101.

15. Wang H, Markman B, DeSouza P, Kefford R, Dees EC, Gangadhar T, Piha-Paul SA, **Zamboni WC**, Murphy C, Senderowicz A. A dose-escalation study of weekly intravenous CRLX301 in patients with advanced solid tumor malignancies. Submitted to ESMO 2016.
16. Bokhart MT, Schorzman A, Lucas A\*, **Zamboni WC**, Muddiman DC. Visualization of small molecule and nanoparticle anticancer agents in tissue and tumor sections using IR-MALDESI mass spectrometry imaging. ASMA 2016.
17. Markman B, DeSouza P, Dees EC, Gangadhar TC, Cooper A, Roohullah A, **Zamboni WC**, Murphy C, Senderowicz, Wang H. A phase 1 study of CRLX301, a novel nanoparticle-drug conjugate (NDC) containing docetaxel (DOC), in patients with refractory solid tumors. ASCO 2016. #2526.
18. Risselada M, Linder KE, Griffith E, Roberts BV\*, Davison GS, **Zamboni WC**, Messenger KM. Subcutaneous administration of carboplatin in pluronic F127 in a rodent model. Duke NC State Comparative Oncology Symposium. Feb 2016.
19. Hartman LK, Dhruv HD, Householder KT, Roth JE\*, Schorzman AN, **Zamboni W**, Sirianni R, Berens ME. Intravenous delivery of erlotinib-loaded PLA-PEG nanoparticles for glioblastoma. AACR 2016. #1329.
20. **Zamboni WC**, Markman B, de Souza P, Dees EC, Gangadhar TC, Eliasof S, Murphy C, Senderowicz A, Wang H. Pharmacokinetics (PK) of CRLX301, a Novel Nanoparticle-Drug Conjugate (NDC) Containing the Payload Docetaxel, in Patients with Refractory Solid Tumors. AACR 2016, #2047.
21. Salch SA, **Zamboni WC**, Eckel SF. The use of a surface detection kit to identify occupational hazardous drug exposure: identifying pharmacy practice patterns and predictors associated with surface contamination of docetaxel. ASHP 2015.
22. Chang XS, Madden AJ\*, Rivera J, Santos C, Darr D, Hunter L, **Zamboni WC**. Use of microbeam radiation therapy to increase the tumor delivery of PEGylated liposomal doxorubicin in a triple negative breast cancer GEM model. Submitted to American Association of Physics in Medicine 2015.
23. Dhruv HD, Hartman LK, Householder KT, Roth JE\*, Schorzman AN, **Zamboni WC**, Sirianni R, Berens ME. Intravenous delivery of erlotinib-loaded PLA-PEG nanoparticles for treatment of glioblastoma. Submitted to SNO-SCIDOT Joint Conference on Therapeutic Delivery to the CNS 2015.
24. Chang XS, Madden AJ\*, Rivera J, Santos C, Darr D, Hunter L, **Zamboni WC**. The effects of microbeam radiation therapy on the tumor pharmacokinetics of PEGylated liposomal doxorubicin in a triple negative breast cancer GEM model. Submitted to AACR 2015.
25. Bori F\*, Madden A\*, Kumar P\*, Moore S\*, Ramanathan R, **Zamboni WC**. Effect of Obesity and Hormones on Pharmacokinetics and Pharmacodynamics of PEGylated Liposomal CKD-602 (S-CKD602). Presented at the Annual Biomedical Research Conference for Minority Students 2013.
26. Eckel SF, McAdoo WF\*, Sherwood CA\*, O'Neal SK, **Zamboni WC**. Evaluation of Hazardous Drug Clean (HDClean), a two-step towelette system, in removing surface contamination of hazardous drugs. Presented at FIP Annual Meeting 2013.
27. Karginova O, Adamo B, Deal A, Santos C, Darr D, Bash R, Sandison K\*, **Zamboni W**, Miller R, Anders C. Efficacy of Carboplatin alone or with ABT888 in a BRCA-mutated, basal-like, Triple Negative Breast Cancer (TNBC) intracranial murine model. Presented at SABCS 2013.
28. Schorzman AN, Chu K, Finniss M, Bowerman C, Kuijter J, Madden A, DeSimone J, **Zamboni W**. An LC-MS/MS Assay for Simultaneous Quantitation of Docetaxel and its Prodrug-Conjugate for Pharmacokinetic Studies of PRINT-Lipidized-Docetaxel Nanoparticles in Mice. Proceedings ASMS 2013, #1203.
29. Madden A\*, Rawal S\*, Chu K, Sandison K\*, Schell R\*, Feng L, Ma P, Mumper R, DeSimone J, **Zamboni WC**. Meta-analysis evaluating the efficiency of tumor and tissue delivery of carrier-mediated agents (CMA) and small molecules (SM) using a novel pharmacokinetic (PK) metric relative distribution index over time (RDI-OT). 2013 Proceedings of AACR, #3366.

30. Song G\*, Darr DB, Santos CM, Kim M, Midkiff BR, Feinberg NN, Miller CR, Rogers A, Dudley AC, Perou CM, **Zamboni WC**. Relationship between Tumor Microenvironment, Tumor Delivery, and Efficacy of PEGylated Liposomal Doxorubicin (PLD) and Non-liposomal doxorubicin (NL-doxo) in Genetically Engineered Mouse Models (GEMMs) of Breast Cancer (BC). 2013 Proceedings of AACR, #3365.
31. Caron W\*, Song G\*, Kumar P\*, Lay J, Gehrig P, **Zamboni W**. Phenotypically profiling the factors affecting the pharmacokinetics and pharmacodynamics of nanoparticles in preclinical models and in patients. Society of Toxicology Annual Meeting, San Antonio, TX, March 2013.
32. Hinkal G, Hull L, Mazar A, **Zamboni W**. The Animal Models Working Group: Index and Best Practices. NCI Alliance for Nanotechnology in Cancer; Annual Principal Investigator Meeting. November 2012.
33. Caron WP\*, Song G\*, Lay JC, Madden AJ\*, Schorzman A, O'Neal S, Gehrig PA, Decuzzi P, **Zamboni WC**. PhenoGLO-HTSP: A High Throughput Screening Platform that Profiles the Bi-Directional Interaction between Nanoparticle Agents and the Mononuclear Phagocyte System (MPS). NCI Alliance for Nanotechnology in Cancer; Annual Principal Investigator Meeting. November 2012.
34. Caron WP\*, Lay JC, Santos C, Merricks EP, Nichols TC, Ramanathan RK, Gehrig PA, **Zamboni WC**. Relationship between interspecies variability in the mononuclear phagocyte system and nanoparticle pharmacokinetics. 2012 Proceedings of 24th EORTC-NCI-AACR Symposium on 'Molecular Targets and Cancer Therapeutics, #59.
35. Song G\*, Moore SM\*, Tarrant TK, Dobrovolskaia MA, Barrow DA, Kumar P\*, Newman SE, Bae-Jump V, Gehrig PA, **Zamboni WC**. Relationship between complement factors and CC chemokines and the pharmacokinetics (PK) and pharmacodynamics (PD) of PEGylated liposomal doxorubicin (PLD) in patients with refractory epithelial ovarian cancer (EOC). 2012 Proceedings of 24th EORTC-NCI-AACR Symposium on 'Molecular Targets and Cancer Therapeutics, #126.
36. Giovinazzo H\*, Kumar P\*, Sheikh A, Ivanovic M, Walsh M\*, Caron WP\*, Song G\*, Whitlow A, Newman S, La-Beck N\*, Kowalsky R, Zamboni B, Clarke-Pearson D, Brewster W, Van Le L, Bae-Jump V, Gehrig P, **Zamboni W**. Technetium-99m Sulfur Colloid (TSC) as a phenotypic probe for predicting pharmacokinetics (PK) and palmar-plantar erythrodysesthesia (PPE) toxicity of PEGylated liposomal doxorubicin (PLD) in patients with recurrent epithelial ovarian cancer (EOC). October 22, 2012. ACCP 2012 Annual Meetin, #27991.
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130. **Zamboni WC**, Hamburger DR, Jung LL\*, Jin R, Joseph E, Strychor S, Sun SL, Ramanathan RK, Egorin MJ, Eiseman JL. Relationship Between Systemic Exposure of 9-nitrocamptothecin (9NC, Rubitecan, RFS2000) & its 9-aminocamptothecin (9AC) Metabolite & Response in Human Colon Cancer Xenografts. AACR-NCI-EOTRC Meeting 2001: #400.
131. Gilbert BE, Newman RA, **Zamboni WC**, Knight V, Verschraegen CF. Pharmacokinetics of multiple 9-nitrocamptothecin (9NC) liposome aerosols during a Phase I study: levels of total and lactone forms and its conversion to 9-aminocamptothecin (9AC). Proceeding of ASCO 2001: #536.
132. **Zamboni WC**, Jung LL\*, Jin R, Egorin MJ, Wong MKK, Belani CP, Potter DM, Tauch JS, Strychor S, Sun SL, Trump DL, Ramanathan RK. Phase I and pharmacokinetic (PK) study of intermittently administered 9-nitrocamptothecin (9NC, rubitecan) in patients with advanced malignancies. Proceeding of ASCO 2001: #411.
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134. Vozniak JM\*, Stewart CF, Jin R, Coons JC\*, Hanna S, Ramanathan RK, Sun SL, Egorin MJ, **Zamboni WC**. Lactone stability of camptothecin analogs in urine: implications for the development of cystitis. Proceedings of AACR 2001: #5021.
135. **Zamboni WC**, Jin R, Delauter BJ\*, Egorin MJ, Belani C, Wong M, Tauch JS, Strychor S, Potter DM, Lenaz L, Sun SL, Trump DL, Ramanathan RK. Plasma and urine disposition of 9-nitrocamptothecin (9NC, Rubitecan) & its 9-aminocamptothecin (9AC) metabolite as part of Phase I study of intermittently administered rubitecan. Proceedings of 11th NCI-EORTC-AACR Symposium on New Drugs in Cancer Therapy, November 2000: #242.
136. **Zamboni WC**, Gervais AC\*, Schellen JHM, Delauter BJ\*, Egorin MJ, Zuhowski EG, Pluim D, Hamburger DR, Working PK, Colbern G, Eiseman JL. Disposition of platinum (Pt) in B16 murine melanoma tumors after administration of cisplatin & pegylated liposomal-cisplatin formulations (SPI-077 & SPI-077 B103). Proceedings of 11th NCI-EORTC-AACR Symposium on New Drugs in Cancer Therapy, November 2000: #132.
137. **Zamboni WC**, Gervais AC, Egorin MJ, Schellens JHM, Delauter BJ, Zuhowski EG, Pluim D, Hamburger DR, Eiseman JL. Inter- and Intratumoral Disposition of Platinum (Pt) in B16 Murine Melanoma Tumors after Administration of Cisplatin. Proceeding of ACCP 2000: #325.
138. Working P, Slater J, Colbern G, Schellens J, **Zamboni WC**, Huang A. Encapsulation of cytotoxic drugs in STEALTH liposomes: relationship of pharmacokinetics, toxicity, and activity. Presented at the Fourth International Liposome Conference.
139. Tkaczuk KH, Hussain A, Tait N, DeSchields M, Hamden H, Rehner J, Quinn C, **Zamboni WC**, Hausner PF. A Phase I study of doxorubicin (DOX), docetaxel (DOC), and gemcitabine (GEM) combination (TAG) in patients (pts) with solid tumors. Proceedings of American Society of Clinical Oncology, 2000: #852.
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141. Delauter BJ\*, Ramanathan RK, Stover LL, Zuhowski EG, Egorin MJ, Plunkett WK, **Zamboni WC**. Pharmacokinetics of gemcitabine and 2'-2'-difluorodeoxyuridine in a patient with ascites. Proceedings of American Society of Clinical Oncology, 2000: #921C.
142. **Zamboni WC**, Jin R, Vaughn MT, Zuhowski EG, Egorin MJ. High performance liquid chromatography (HPLC) assay with methanolic extraction for 9-nitrocamptothecin (9NC, RFS2000) and 9-aminocamptothecin (9AC). Proceedings of the American Association for Cancer Research, 2000: #3425.
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146. Luftner D, Possinger D, Schweigert M, Sezer O, Dobson J, Egorin M, **Zamboni WC**. Increasing topotecan (TPT) infusion from 30-minutes to 4-hours infusions prolongs the duration of exposure in the cerebrospinal fluid (CSF). Proceedings of the American Association of Cancer Research 1999: #735.
147. **Zamboni WC**, Egorin M, Grimm A, Stewart J, Sentz D, Zuhowski E, Eiseman D. Disposition of unbound and total-platinum in B16 murine melanoma tumors after cisplatin administration. Proceedings of the American Association for Cancer Research 1999: #2596.
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152. Thompson J, **Zamboni WC**, Stewart CF, Houghton PJ. Therapeutic synergy of topotecan in combination with vincristine for treatment of xenografts representing several childhood malignancies. Proceedings of AACR 1998: #527.
153. Gajjar AJ, **Zamboni WC**, Houghton PJ, Danks MK, Heideman RL, Reardon D, Thompson S, Kun L, Stewart CF. Rationale for pharmacokinetically targeted Phase II trial of topotecan (TPT) in newly diagnosed patients with medulloblastoma/PNET. Proceedings of The American Society of Pediatric Hematology Oncology 1997.
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156. Santana VM, **Zamboni WC**, Houghton P, Stewart CF. Use of preclinical models and pharmacokinetics to define new schedules and dosing strategies of topotecan in pediatric malignancies. Proceedings of The American Society of Pediatric Hematology Oncology 1997.
157. Stewart CF, Gajjar AJ, Heideman RL, Houghton PJ, **Zamboni WC**. Phenytoin increases topotecan (TPT) clearance in a patient with medulloblastoma (MB). Proceedings of the American Society of Clinical Oncology 1997: #1012.
158. Santana V, **Zamboni WC**, Gajjar A, Pappo A, Houghton P, Meyer W, Stewart C. Pharmacokinetically guided use of topotecan (TPT) given (daily x 5) x2, in children with solid tumors. Proceedings of ASCO 1997: #511.

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160. **Zamboni WC**, Houghton P, Hulstein J, Crom W, Thompson J, Cheshire P, Stewart C. Relationship between tumor extracellular fluid (ECF) exposure and tumor response in human neuroblastoma xenografts. Proceedings of the American Association for Cancer Research 1997.
161. **Zamboni WC**, Houghton PJ, Hulstein J, Thompson JC, Cheshire PJ, Stewart CF. Probenecid inhibits systemic and renal clearance of topotecan. Proceedings of the American Society for Clinical Pharmacology and Therapeutics 1997. Clin Pharmacol Therap 1997; 61:145.
162. **Zamboni WC**, Stewart CF, Thompson J, Houghton PJ. The relationship between systemic exposure to topotecan and tumor response in human neuroblastoma xenografts. Proceedings of the Seventh Conference on DNA Topoisomerases in Therapy 1996.
163. Stewart CF, **Zamboni WC**, Gajjar A, Kun L, Heideman R. Clinical pharmacokinetics of topotecan in plasma and CSF, experimental and clinical data. Proceedings of the Second Congress of the European Association for Neuro-Oncology, Wurzburg, Germany. J Neuro-Oncol 1996; 30:163.
164. **Zamboni WC**, Crom WR, Houghton PJ, Thompson JC, Stewart CF. Plasma protein binding of SN-38, the active metabolite of irinotecan. Proceedings of the Annual Meeting of American College of Clinical Pharmacy, Nashville, TN, August 1996. Pharmacother 1996; 16:500.
165. Bowman LC, Stewart CF, **Zamboni WC**, Crom WC, Luo X, Heideman R, Houghton PJ, Meyer WH, Pratt CB. Toxicity and pharmacodynamics of oral topotecan (POTOPO) in pediatric patients with relapsed solid tumors. Proceedings of ASCO 1996: #462.
166. **Zamboni WC**, Heideman RL, Meyer WH, Gajjar AJ, Crom WR, Stewart CF. Pharmacokinetics (PK) of topotecan (TPT) in pediatric patients with normal and altered renal function. Proceedings of ASCO 1996; #371.
167. Stewart CF, **Zamboni WC**, Crom WR, Houghton PJ, Pratt CB. Pharmacokinetics of DMP-840 in children with relapsed solid tumors. Proceedings of AACR 1996: #181.
168. **Zamboni WC**, Crom WR, Bowman LC, Pratt CB, Houghton PJ, Stewart CF. Interpatient variability in oral (PO) absorption of topotecan (TPT) in children with relapsed solid tumors. Clin Pharmacol Ther 1996; 59:198.
169. Piscitelli SC, **Zamboni WC**, Wells M, Metcalf J, Baseler M, Stevens R, Lane C and Kovacs J. Co-modeling of interleukin-2 as a function of soluble IL-2 receptors in HIV-infected patients. Pharmacotherapy 1995; 15:389.

**Submitted:**

1. Williams GR, Al-Obaidi M, Rower J, Harmon C, Dai C, Acosta E, Giri S, **Zamboni W**, Lucas AT, Shachar SS, Gbolahan O, Meyerhardt J, Caan B, Bhatia S. Does Oxaliplatin Pharmacokinetics (PKs) explain the association between Body Composition and Chemotoxicity Risk in older patients with gastrointestinal (GI) Cancers. Submitted to ASCO 2021.

**INVITED TALKS**

1. Minibeam Radiation Therapy Enhanced Delivery of Nanoparticle Anticancer Agents to Pancreatic Cancer Tumors. NCI Alliance for Nanotechnology in Cancer Program Meeting. Oct 2021.
2. Effect of Body Habitus and Race on the Innate Immune System and the Pharmacology of Complex Drugs and Biologics. UNC TREND, UNC LCCC. Oct 2021.
3. Translational Studies of the Innate Immune System as Biomarkers for the Pharmacology of Complex Drugs and Biologics: A Model for Team Pharmaceutical Sciences. WVU School of Pharmacy. Nov 2018.

4. Biomarkers of the Mononuclear Phagocytic System (MPS) for the Pharmacokinetics and Pharmacodynamics of the Antibodies and Antibody Drug Conjugates. PEGS Summit: Clinical Progress in Antibody-Drug Conjugates. Boston, MA. May 2018.
5. Evaluating the Efficiencies and Deficiencies of Nanoparticle Tumor Delivery and Disposition, CCNE Site Visit to UNC. Chapel Hill, NC. February 2018.
6. Relationship between the Mononuclear Phagocyte System and the Pharmacokinetics and Pharmacodynamics of Antibody Drug Conjugates in Patients. PEGS Boston – Antibody-Drug Conjugates. Boston, MA. May 2017.
7. Pharmacokinetics and Pharmacodynamics of Nanoparticles; Bi-directional Interaction between Nanoparticle Agents and the Mononuclear Phagocyte System. The Carolina Nanoformulations Workshop, Chapel Hill, NC. 2017.
8. Evaluation of the Bi-Directional Interaction between the Mononuclear Phagocyte System (MPS) and the Pharmacokinetics and Pharmacodynamics of Carrier Mediated Agents and Antibody-Drug Conjugates. PEGS Boston – Antibody Drug Conjugates II: Advancing Towards the Clinic. Boston, MA. April 2016.
9. Factors affecting the clearance, distribution, and tumor delivery of carrier-mediated agents. Barrow Neurological Institute. Phoenix, AZ. Feb 2016.
10. Understanding the factors affecting the PK of nano agents in preclinical models and in patients as a method to improve the therapeutic index. Applied Pharmaceutical Nanotechnology (APN) meeting. Cambridge, MA. Nov 2015.
11. Bi-directional interaction between mononuclear phagocyte system and nanoparticles in blood, tumor and tissues. American Society of Nanomedicine. Crystal City, VA. Oct 2015.
12. Interactions between tumor microenvironmental factors and nanomedicines which influence tumor delivery and efficacy. American Society of Nanomedicine. Crystal City, VA. Oct 2015.
13. Bi-directional interaction between the mononuclear phagocyte system and liposomal agents in preclinical models and patients. 24<sup>th</sup> Annual Southeast Lipid Research Conference. Stone Mountain, GA. Sept 2015.
14. Preclinical Characterization of ADME, PK, PD, and toxicology of Nanoformulations; Use of nano agents in non-cancer diseases; Factors affecting nano delivery to tumors in animal models and patients; Clinical PK and PD (efficacy and toxicity) aspects of nano agents. Carolina Nanoformulations Workshop, UNC Eshelman School of Pharmacy. 2015.
15. Interactions between the mononuclear phagocyte system, carrier-mediated agents and antibody drug conjugates. Americas Antibody Congress 2015. San Diego, CA. May 2015.
16. Translational studies evaluating the bi-directional interaction between the mononuclear phagocyte system and carrier-mediated agents. National Center for Toxicological Research. Jefferson, AK. May 2015.
17. Bi-directional interaction between the mononuclear phagocyte system and nanoparticle pharmacokinetics and pharmacodynamics in preclinical models and patients. University of Kentucky, Lexington, KY. May 2015.
18. Bi-directional interaction between the mononuclear phagocyte system and nanoparticle pharmacokinetics and pharmacodynamics: Influence on Accelerated Blood Clearance. Moderna Symposium on Accelerated Blood Clearance of Nanoparticles. Boston, MA. March 2015.
19. Translational Studies Evaluating the Bi-directional Interaction between Carrier-Mediated Anticancer Agents and the Mononuclear Phagocyte System. 36<sup>th</sup> EORTC-PAMM Winter Meeting, Marseille Provence Metropole, France. January 2015.
20. Workshop: Profiling the Factors that Alter the Tumor Delivery of Carrier-Mediated Agents. World ADC Conference, San Diego, CA. Nov 2014.
21. Factors Affecting the Pharmacokinetics and Pharmacodynamics of Nanoparticles, Carrier-Mediated Agents and Antibody Drug Conjugates: Similarities and Connections. World ADC Conference, San Diego, CA. Nov 2014.



22. Pharmacokinetics and Pharmacodynamics of Nanoparticles and Carrier-Mediated Agents in Preclinical Animal Models and in Patients. CACO-PBSS Cancer Nanotherapeutics Workshop, San Francisco, CA, April 2014.
23. NIH/NIAID/DAIDS Workshop on Long Acting / Extended-Release Antiretroviral Drugs, Boston, MA, March 2014.
24. Safety and ADMET Aspects of Nanotechnology in Parenteral Drug Products. US FDA and PQRI Workshop on Nanomaterial Drug Products: Current Experience and Management of Potential Risks, Silver Spring, MD, Jan 2014.
25. Profiling the Interaction between Nanoparticle and Carrier-Mediated Agents and the Mononuclear Phagocyte System in Blood, Tumors and Tissues. CT3N Symposium, University of Pennsylvania, Nov 2013.
26. Profiling the Factors affecting Nanoparticle and Carrier-Mediated Agent Clearance and Delivery to Tumors and Tissues. PKUK Meeting, Harrogate, North Yorkshire, UK, Oct 2013.
27. Evaluation of Factors Affecting Nanoparticle Pharmacokinetics and Pharmacodynamics in Preclinical Models and Patients: A focus on Patient Characteristics and the Mononuclear Phagocyte System. Pharmacoepidemiology Seminar Series, UNC School of Medicine, Chapel Hill, NC, Oct 2013.
28. Profiling the Factors affecting Nanoparticle Clearance and Delivery to Tumors and Tissues. Department of Pharmacology, Harvard University, Boston, MA, Oct 2013.
29. Novel Methods, Models and Pharmacologic Results to Guide the Translational Development of Nanoparticle and Carrier-Mediated Agent. Department of Pharmacology, UNC School of Medicine, Oct 2013.
30. Novel pharmacologic and phenotypic methods to characterize carrier-mediated and nanoparticle agents as part of preclinical and clinical development. 2nd International Conference and Exhibition on Biowaivers and Biosimilars, Raleigh, NC, Sept 2013.
31. Phenotypically profiling the factors affecting the pharmacokinetics and pharmacodynamics of nanoparticle agents in preclinical models and in patients. Society of Toxicology Annual Meeting, San Antonio, TX, March 2013.
32. Evaluation of the mononuclear phagocyte system (MPS) and effects on nanoparticle pharmacokinetics and pharmacodynamics in preclinical animal models and in patients. Nanomedicines Alliance Industry Symposium on Nanomedicines: Charting a Road to Commercialization. Rockville, MD, March 2013.
33. Profiling the biological factors modulating nanoparticle clearance, biodistribution and tumor delivery in preclinical animal models and in patients. NCI Alliance for Nanotechnology in Cancer Annual Principal Investigator Meeting, Biodistribution Working Group Session, Houston, TX, November 2012.
34. Profiling the bi-directional interaction between nanoparticle agents and the mononuclear phagocyte system: effects on clearance and tumor delivery of nanoparticle agents. NIH/NCI TONIC / Alliance for Nanotechnology in Cancer / Industry Workshop on Enhanced Permeability and Retention (EPR) Effect and Nanomedicine Drug Targeting in Cancer, NIH, Bethesda, MD, October 2012.
35. Factors affecting the bi-directional interaction between liposomal agents and the mononuclear phagocyte system. AAPS Webinar, September 2012.
36. Profiling the biological factors modulating drug delivery in preclinical animal models and in patients. Invited speaker for the 2012 Drug Carriers in Medicine and Biology Gordon Research Conference, Waterville Valley Resort, NH, August 2012.
37. Influence of the MPS on the clearance and tumor delivery of nanoparticle agents. In the session on Pharmacokinetics of Nanoparticles – Understanding Interactions at the Nano/Bio Interface, AAPS National Biotechnology Conference, San Diego, CA, May 2012.
38. Phenotypic probing of the mononuclear phagocyte system as a method to individualize therapy with PEGylated liposomal doxorubicin (PLD) in patients with refractory ovarian cancer. Ovarian Cancer: Prevention, Detection and Treatment of the Disease and Its Recurrence – Molecular Mechanisms and Personalized Medicine. University of Pittsburgh Cancer Institute, Pittsburgh, PA, 2012.

39. Technetium-99m sulfur colloid (TSC) as a phenotypic probe for predicting the pharmacokinetics and pharmacodynamics of PEGylated liposomal doxorubicin (PLD; Doxil) in patients with recurrent epithelial ovarian cancer. UNC Nuclear Medicine Division of Radiology Meeting, May 2012.
40. Pharmacologic methods and resources to facilitate the translational development of carrier-mediated and nanoparticle agents. Northwestern University Center for Cancer Nanotechnology Excellence, Chicago, IL, April 2012.
41. Factors affecting the pharmacokinetics and pharmacodynamics of nanoparticle agents in preclinical models and in patients. ASME Early-Stage Research Collaboration Nano Engineering for Medicine and Biology Workshop, Washington DC, April 2012.
42. PhenoGLO: Novel platforms to profile nanoparticle agents and individualize nanoparticle therapy. Nanotechnology Commercialization Conference, Durham, NC, April 2012.
43. Phenotypic probing of the mononuclear phagocyte system as a method to individualize PEGylated liposomal doxorubicin (Doxil) therapy in patients with refractory ovarian cancer: Results of UNC LCCC clinical study. UNC LCCC Gynecologic Oncology Group, Chapel Hill, NC, March 2012.
44. Overview of nanoparticle anticancer agents and pharmacologic issues. UNC LCCC Phase I Program Seminar, Chapel Hill, NC, March 2012.
45. Age related effects on the pharmacokinetics and pharmacodynamics of PEGylated-liposomal anticancer agents: Alterations in MPS function? UNC LCCC Geriatric Oncology Program, Chapel Hill, NC, February 2012.
46. Phenotypic probing of the bi-directional interaction between PEGylated liposomal agents and the mononuclear phagocyte system. Carolina Center of Cancer Nanotechnology Excellence Seminar, Chapel Hill, NC, February 2012.
47. Unique pharmacologic resources to evaluate and improve the preclinical and clinical development of carrier-mediated and nanoparticle agents. Center for Innovation for Nanobiotechnology (COIN) and NanoMedicine Partnering Mission of Medicon Valley of Denmark and Sweden Meeting, Chapel Hill, NC, January 2012.
48. Phenotypic probing of the bi-directional interaction between PEGylated liposomal agents and the mononuclear phagocyte system. International Liposome Society Liposome Advances Conference, London, England, December, December 2011.
49. Novel pharmacokinetic and pharmacodynamic metrics to profile the systemic, tumor and tissue disposition of nanoparticle agents. Nanoparticle Biodistribution: Physical and Biological Effects at the NCI Alliance for Nanotechnology in Cancer Investigators' Meeting, Boston, MA, September 2011.
50. Pharmacologic and animal model pitfalls for the translational development of nanoparticle agents as part of the symposium on Nanotechnology in Products: Pitfalls and Successes in the Path to a Commercial Product at the MANCEF/COMS Nanotechnology Meeting, August 2011. Panel Member.
51. Lessons learned in the translation from animals to humans for pharmacokinetics and pharmacodynamics of nanoparticle agents. Nanomedicine Product Development Summit: Turning Nanoparticle Delivery Systems into Innovative Medicines. Controlled Release Society Meeting, July 2011. Panel Member.
52. Factors affecting the pharmacokinetics and pharmacodynamics of nanoparticle agents in animal models and in patients. Pharmacologic and Regulatory Issues for the Translational Development of Nanoparticle Agents Workshop, Controlled Release Society Meeting, July 2011, Co-Chair.
53. Pharmacologic methods to improve the translational development of nanoparticle agents. Department of Pharmacology, East Carolina University, May 2011.
54. Factors Affecting the Translational Development of Nanoparticle Agents. Department of Pharmacology, Wake Forest University, April 2011.

55. Mechanistic PK-PD Modeling of the Bi-directional Interaction between PEGylated Liposomal Anticancer Agents and Monocytes. AAPS National Biotechnology Conference, April 2011.
56. How to improve the translational development of nanoparticle agents via pharmacologic methods. NC Society of Toxicology Meeting, March 2011.
57. Factors affecting the pharmacokinetics (PK) and pharmacodynamics (PD) of nanoparticle and nanosomal anticancer agents. EORTC-AACR-NCI Meeting, November 2010.
58. Preclinical and translational pharmacology of nanoparticle therapeutics. American College of Toxicology Meeting, October 2010.
59. Bi-Directional Pharmacokinetic and Pharmacodynamic Interaction between PEGylated Liposomal Anticancer Agents and the Reticuloendothelial System. International Liposome Research Days, August 2010.
60. Pharmacology and Toxicology Issues Affecting the Translational Development of Nanoparticle Agents. NCI Best Practices in Cancer Nanotechnology Workshop, June 2010.
61. Evidence and Clinical Practice Experience of Pharmacokinetic Monitoring of 5-FU for Colorectal Cancer. HOPA Annual Meeting, March 2010.
62. Age Related Effects on the Pharmacokinetic and Pharmacodynamics of Liposomal and Nanoparticle Anticancer Agents. UNC LCCC Geriatric Oncology Program. March 2010.
63. Factors Affecting the Pharmacokinetics and Pharmacodynamics of Liposomal and Nanoparticle Agents. AAPS Webinar, February 2010.
64. Factors Affecting the Pharmacokinetics and Pharmacodynamics of PEGylated Liposomal Anticancer Agents. International Liposome Society Liposome Advances Conference, London, England, December 2009.
65. Factors Affecting the Pharmacology of PEGylated Liposomal Agents in Patients. Fourth Annual NCI Alliance for Nanotechnology in Cancer Investigators Meeting, October 2009.
66. Individualizing Pegylated Liposomal Doxorubicin (PLD) Treatment in Patients with Ovarian Cancer. UNC LCCC Board of Visitors Meeting. August 2009.
67. Factors Affecting the Pharmacokinetics and Pharmacodynamics of Nanosomal Anticancer Agents: Evaluation of the Reticuloendothelial System, Chapel Hill Drug Conference, University of North Carolina, Chapel Hill, NC in May 2009.
68. Development of Phenotypic Probes of the Reticuloendothelial System as Part of the Translational Development of Nanosomal and Nanoparticle Anticancer Agents, UNC Institute for Pharmacogenetics and Individualized Therapy Seminar Series, Feb 2009.
69. Evaluation of the Reticuloendothelial System as Part of the Translational Development of Nanosomal Anticancer Agents, UNC Pathology and Laboratory Medicine Grand Rounds, February 2009.
70. Translational Development of Nanosomal and Nanoparticle Anticancer Agents, UNC Gynecology Oncology Grand Rounds, January 2009.
71. Influence of the Reticuloendothelial System on the Pharmacokinetics and Pharmacodynamics of Nanosomal and Nanoparticle Anticancer Agents, Philadelphia College of Pharmacy and Sciences, Pharmaceutical Sciences Dept, Grand Rounds, January 2009.

72. Factors Affecting the Pharmacokinetics and Pharmacodynamics of Nanosomal Anticancer Agents: Evaluation of the Reticuloendothelial System. Annual Meeting of the American Society for Clinical Pharmacology and Therapeutics in April 2008.
73. Evaluation of the Reticuloendothelial System as Part of the Preclinical and Clinical Development of Liposomal and Nanoparticle Anticancer Agents. Moffitt Cancer Center, Tampa FL in Nov'06; Nanoparticle Characterization Laboratory, National Cancer Institute, Fredrick, MD in Feb 2007.
74. Liposomal and Nanoparticle Anticancer Agents: Magic Bullets N'at. University of Pittsburgh Alumni Association Metro PITT Club Meeting, Pittsburgh, PA, May 2006.
75. Preclinical and Clinical Development of Liposomal Anticancer Agents. FDA, Feb 2006.
76. Novel Methods for Pharmacokinetic Sampling: Use of Microdialysis to Evaluate the Pharmacokinetics and Pharmacodynamics of Drugs. HOPA Annual Meeting, San Diego, CA, June 2005.
77. Optimizing Erythropoietic Growth Factor Formulary Management: 2005 Interchange Opportunities. University Pharmacotherapy Associates Program. January 2005 to Present.
78. Optimizing Outcomes in Chemotherapy-Induced Neutropenia: Synchronized CSF Innovation. University Pharmacotherapy Associates Program. July 2004 to January 2005.
79. Systemic, Tissue, and Tumor Disposition of Stealth Liposomes. University of Pittsburgh School of Pharmacy Alumni Weekend. Seven Springs, PA. June 2002 and Children's Hospital of Philadelphia, March 2004.
80. Use of Microdialysis in Pharmacodynamic Studies of Anticancer Agents. 4<sup>th</sup> International Symposium on the Pharmacodynamics of Anticancer Agents. Sea Island, GA. September 2001.
81. Use of PET Imaging in the Development of Anticancer Agents. Significant Papers in Pharmacotherapy. The Annual Meeting of the American College of Clinical Pharmacy, Los Angeles, CA. November 2000.
82. Pharmacokinetic Principles and Modeling, Regional Chemotherapy and Tumor Disposition of Anticancer Agents. The Seventh Annual Berlex Oncology Clinical Pharmacology of Anti-Cancer Drugs Course, Leesburg, VA. November 2000.
83. Tumor Disposition of Platinum after Administration of Cisplatin and Liposomal-Cisplatin in Mice Bearing B16 Murine Melanoma Tumors. Fourth Annual Invitational Oncology Pharmacy Conference. St. Thomas, Virgin Islands.
84. Plant Alkaloids. University of Pittsburgh Cancer Institute Comprehensive Chemotherapy Course. Pittsburgh, PA. October 1999.
85. Pharmacokinetic Principles and Modeling, Regional Chemotherapy and Tumor Disposition of Anticancer Agents. The Seventh Annual Berlex Oncology Clinical Pharmacology of Anti-Cancer Drugs Course, Leesburg, VA. October 1999.
86. Factors Affecting Platinum Exposure and Formation of Platinum-DNA Adducts in Solid Tumors. St. Jude Children's Research Hospital, Memphis, TN, May 1999.
87. Factors Affecting Platinum Exposure and Formation of Platinum-DNA Adducts in B16 Murine Melanoma Tumors after Cisplatin Administration. Third Annual Invitational Oncology Pharmacy Research Conference. Napa Valley, CA. February 1999.
88. Pharmacokinetic Principles and Modeling, and Tumor Disposition of Anticancer Agents. The Sixth Annual Berlex Oncology Clinical Pharmacology of Anti-Cancer Drugs Course, Leesburg, VA. October 1998.

89. Use of Microdialysis Methodology to Evaluate Anticancer Agent Disposition in Tumor Extracellular Fluid. Second Annual Invitational Oncology Pharmacy Research Conference. Newport Beach, CA. February 1998.
90. Pharmacokinetically Guided Dose Adjustment Reduces Variability in Topotecan Systemic Exposure in Children with Solid Tumors. St. Jude Children's Research Hospital Postdoctoral Retreat. Memphis, TN. April 1997.
91. Cerebrospinal Fluid Disposition of Topoisomerase I Inhibitors in the Nonhuman Primate Model. St. Jude Children's Research Hospital Postdoctoral Retreat. Memphis, TN. April 1996.
92. Pharmacokinetic and Pharmacodynamic Research of Chemotherapeutic Agents. University of Pittsburgh School of Pharmacy, Pittsburgh, PA. October 1995.
93. Clinical Applications of Gene Therapy to Genetic and HIV Diseases. First Annual Pharmacotherapy Frontiers Symposium. Warren G. Magnuson Clinical Center, National Institutes of Health, Bethesda, MD. May 1995.
94. Evaluation of Ondansetron and Granisetron Cross-Sensitivity and Systemic Exposure Responses. Eastern States Residency Conference. Baltimore, MD. April 1995.

## **GRANTS**

### **Current Grants:**

- |                          |  |
|--------------------------|--|
| Source of Support:       | NIH - 1R01HL153744-01A1  |
| Principal Investigators: | D. Lawrence  |
| Co-Investigator:         | W Zamboni  |
| Total Direct Funding:    | \$2,705,713 Total award; \$247,830 to Zamboni's lab of 3 yrs. from 05/01/2022                              |
| Total Period Support:    | 05/01/21 – 03/31/25  |
| Percent Effort:          | 5% Effort/ 5% Salary   |
| Project Title:           | Design and Application of Photoresponsive Modules in Circulating Erythrocytes                              |
|                          |  |
| Source of Support:       | NIH - 1R21CA267584-01  |
| Principal Investigators: | V Bae-Jump; W Zamboni  |
| Total Funding:           | \$427,625  |
| Total Period of Support: | 01/31/22 – 12/31/24 (Currently waiting for NOA to be issued)   |
| Percent Effort:          | 8% Effort / 8% Salary  |
| Project Title:           | Impact of Obesity on Immuno-Oncology Agents in Endometrial Cancer  |
|                          |  |
| Source of Support:       | NIH - 1R01CA257009-01A1  |
| Principal Investigators: | K. Ainslie   |
| Co-Investigator:         | W Zamboni  |
| Total Direct Funding:    | \$1,761,616 Total award; \$309,698 to Zamboni's lab of 5 yrs.  |
| Total Period Support:    | 08/01/21 – 07/31/26  |
| Percent Effort:          | 4.58% Effort/ 4.58% Salary   |
| Project Title:           | Tunable Temporal Drug Release for Optimized Synergistic Combination Therapy of Glioblastoma                |
|                          |  |
| Source of Support:       | NIH 1R01CA247652-01A1  |
| Principal Investigators: | W Zamboni (Lead PI), S. Chang (Co-PI), and S. Libutti (Co-PI)  |
| Total Direct Funding:    | \$2,792,913 total award of 5 yrs.  |
| Total Period Support:    | 04/01/21 – 03/31/26  |
| Percent Effort:          | 23% Effort/ 23% Salary   |
| Project Title:           | Minibeam Radiation Therapy Enhanced Delivery of Nanoparticle Anticancer Agents to Pancreatic Cancer Tumors |

Source of Support: NCI/NIH 1 1R41CA254834-01A1 / STTR - Deep Creek Pharma  
Principal Investigators: W Gmeiner, W Zamboni  
Total Direct Funding: \$45,124 Total UNC subaward to Zamboni's lab )  
Total Period of Support: 08/17/21 – 07/31/22  
Percent Effort: 10% Effort / 10% Salary  
Project Title: STTR: Phase I: Advanced pre-clinical development of CF10 to improve treatment of metastatic colorectal cancer

Source of Support: NIH - 1R01CA264488-01  
Principal Investigators: A. Kabanov  
Co-Investigator: W. Zamboni  
Total Direct Funding: \$2,452,235 Total award; \$182,248 to Zamboni's lab of 4 yrs.  
Total Period Support: 08/01/21 – 07/31/25  
Percent Effort: 4% Effort/ 4% Salary  
Project Title: TOWARD TRANSLATION OF NANFORMULATED PACLITAXEL-PLATINUM COMBINATION

Source of Support NIH / NCI T32 (2-T32-CA196589-06)  
Principal Investigators Kabanov A  
Total Period of Support 07/08/2020 – 4/30/2022  
Co-Investigator Zamboni W  
Percent Effort 0% Effort / 0% Salary  
Project Title Carolina Cancer Nanotechnology Training Program (C-CNTP)

Source of Support: NCTraCS Funding for COVID-19 Research C192034 Intramural  
Principal Investigators: W Zamboni (Lead-PI), M Heise (Co-PI)  
Total Direct Funding: \$50,000  
Total Period of Support: 06/01/20 – 07/31/22  
Percent Effort: 1% Effort Cost Share  
Project Title: Evaluation of innate immune system (IIS) phenotype on COVID-19 incidence, severity, and treatment outcomes

Source of Support: NIH/NCI Experimental Therapeutics-Clinical Trials Network with Phase 1 Emphasis (ET-CTN) (UM1) – Biomarker Supplement  
Principal Investigators: W Zamboni  
Total Direct Funding: \$100,000  
Total Period of Support: 11/01/18 – 05/31/22  
Percent Effort: 10% Effort / 10% Salary  
Project Title: Pharmacologic studies of the mononuclear phagocyte system as part of the clinical studies of anetumab ravtansine: Sample Analyses

Source of Support: NIH R01 - 1R01HL141934-04  
Principal Investigators: S Lai (Lead PI), W Zamboni (Co-PI)  
Total Direct Funding: \$2,658,480 Total award  
Total Period Support: 05/10/2018 – 04/30/2022  
Percent Effort: 10% Effort/ 10% Salary  
Project Title: Overcoming anti-PEG immunity to restore prolonged circulation and efficacy of PEGylated therapeutics.

Source of Support: NIH - 5UL1TR002489-04  
Principal Investigators: J. Buse  
Co-Investigator: W. Zamboni  
Total Direct Funding: \$38,450,854 Total award  
Total Period Support: 03/30/18 – 02/28/23  
Percent Effort: 5% Effort/ 5% Salary  
Project Title: The North Carolina Translational and Clinical Sciences (TraCS) Institute

### **Current Contracts:**

Source of Support: Inimmune Pharma.  
Principal Investigators: Zamboni W  
Total Direct Funding: \$85,000  
Total Period of Support: 07/01/21 – 06/30/22  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Bioanalytical and Pharmacology studies of INI-4001 in Murine Tumor Models

Source of Support: ChemoGLO  
Principal Investigators: W Zamboni  
Total Direct Funding: \$12,874/year  
Total Period of Support: 09/01/19 – 5/01/22  
Percent Effort: 1% Effort / 1% Salary  
Project Title: Task 5 - Comparison of Chemotherapy Measurements on Surfaces by HDCheck Compared with LC-MS/MS

Source of Support: ChemoGLO  
Principal Investigators: W Zamboni  
Total Direct Funding: \$48,000/year  
Total Period of Support: 01/01/17 – 12/31/22  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Analysis of Platinum Exposures of Surfaces in Hospitals and Pharmacies

### **Internal UNC Projects Administered Via Recharge Center:**

Source of Support: Center for Health Innovation – Innovation Pilot Award  
Principal Investigator(s): Rahima Benhabbour  
Total Direct Funding: \$5,599  
Total Period of Support: 10/23/20 – present  
Percent Effort: 1% Effort / 1% Salary  
Project Title: Lidocaine assay cross-validation and analysis of PK samples of mice treated with mucoadhesive biodegradable films loaded with lidocaine for vulvar pain management.

### **Research Proposals Pending**

#### **Grants:**

Source of Support: NIH RFA-NS-22-037 HEAL Initiative: Advancing Health Equity in Pain and Comorbidities (R61/R33 Clin. Trial Required) – University of Alabama at Birmingham  
Principal Investigators: Grant Williams; Role: Consortium PI W Zamboni  
Total Direct Funding: \$420,656 Total UNC Subaward of 5 yrs.  
Total Period of Support: 12/01/22 – 11/30/27  
Percent Effort: 15% Effort / 15% Salary in year 1; 10% Effort / 10% Salary in yrs. 2-5  
Project Title: Preventing Chemotherapy-Induced Neuropathic Pain through Personalized Dosing - the PRECISE study

Source of Support: NCI/NIH PAR 19-325 – Wake Forest Univ. Health Sciences  
Principal Investigators: W Gmeiner; Role: Consortium PI W Zamboni  
Total Direct Funding: \$288,271 Total UNC Subaward of 3 yrs.  
Total Period of Support: 07/01/22 – 06/30/25  
Percent Effort: 10% Effort / 10% Salary

Project Title: Overcoming RNA-Directed Toxicities of Fluoropyrimidine with CF10

Source of Support: The Foundation for Applied Molecular Evolution (FfAME) – IPF#22-3528

Principal Investigators: S. Benner (Lead PI), W Zamboni (Consortium PI)

Total Direct Funding: \$1,244,393 Total UNC Subaward of 4 yrs.

Total Period Support: 12/01/22 – 11/30/26

Percent Effort: 10% Effort/ 10% Salary in year 1; 15% Effort / 15% Salary in years 2-4

Project Title: Translating Nanostructures from Synthetic Biology for Cancer Intervention.

Source of Support: NCI/NIH PAR-20-284 – Wake Forest Univ. Health Sciences

Principal Investigators: W Gmeiner; Role: Consortium PI W Zamboni

Total Direct Funding: \$623,647 Total UNC Subaward of 5 yrs.

Total Period of Support: 04/01/22 – 03/31/27

Percent Effort: 5% Effort / 5% Salary

Project Title: Modulating Fluoropyrimidine Toxicity and Efficacy thru Nanoscale Polymer Delivery

### **Contracts:**

Source of Support: Nanovalent Pharmaceuticals, Inc. (Task 2)

Principal Investigators: W Zamboni

Total Funding: \$252,198

Total Period of Support: 06/01/21 – 05/31/23

Percent Effort: 5% Effort / 5% Salary

Project Title: Preclinical characterization & evaluation of a targeted nanosphere formulation of doxorubicin (NV-102) by LC-MS/MS in mice to improve treatment of acute lymphocytic leukemia.

Source of Support: Meryx Inc. (Task 7)

Principal Investigators: W Zamboni

Total Funding: TBD

Total Period of Support: 06/01/21 – 05/31/23

Percent Effort: 5% Effort / 5% Salary

Project Title: Bioanalytical and pharmacokinetic studies of MRX-2843 administered as the cis- and trans-isomer forms in plasma of mice.

### **Research Proposals - Past Funding**

#### **UNC - Past Grants:**

Source of Support: UNC LCCC Development Grant – Tier 2

Principal Investigators: V Bae-Jump, W Zamboni

Total Direct Funding: \$200,000

Total Period of Support: 12/01/20 – 01/31/22

Percent Effort: 10% Effort / 0% Salary

Project Title: Atezolizumab and ONC201 as a Novel Treatment Strategy in Obesity-driven Endometrial Cancer

Source of Support: UNC LCCC Development Grant – Tier 1

Principal Investigators: W Zamboni, EC Dees

Total Direct Funding: \$49,995

Total Period of Support: 12/01/17 – 06/30/21

Percent Effort: 10% Effort / 0% Salary

Project Title: Biomarkers of the Mononuclear Phagocytic System as Predictors of the Pharmacokinetics and Pharmacodynamics of the Antibody Drug Conjugate Glembatumumab Vedotin



Source of Support: NIH / NCI T32-CA009156-35  
Principal Investigators: J Pagano, B Weissman  
Total Period of Support: 01/01/16 – 12/31/21  
Co-Investigator: William C. Zamboni  
Percent Effort: 0% Effort / 0% Salary  
Project Title: T32 Training Grant in Cancer Research

Source of Support: 1U54CA198999-01 – CCNE Pilot Grant  
Principal Investigators: Zamboni W (Lead-PI), Lockett M (Co-PI)  
Total Direct Funding: \$49,860  
Total Period Support: 09/01/19 - 06/30/21  
Percent Effort: 5% effort/ 0% salary  
Project Title: Modulation of Tumor Fibroblasts by MRX-2843 to Increase the Tumor Delivery and Efficacy of Nanoparticles in In Vivo and In Vitro 3D Tumor Models.

Source of Support: NIH/NCI Experimental Therapeutics-Clinical Trials Network with Phase 1 Emphasis (ET-CTN) (UM1) – Biomarker Supplement  
Principal Investigators: W Zamboni  
Total Direct Funding: \$99,800  
Total Period of Support: 11/01/17 – 05/31/21  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Pharmacologic studies of the mononuclear phagocyte system as part of the clinical studies of anetumab ravtansine: Assay development and validation

Source of Support: Emory University Drug Development Fund  
Principal Investigators: W Zamboni  
Total Direct Funding: \$6,036  
Total Period of Support: 03/01/19 – 06/30/19  
Percent Effort: 0.25% Effort / 0.25% Salary  
Project Title: Quantitation of SN38 in Plasma, Tumor and Liver after Administration of HA-SN38 Nanoparticle in Mice

Source of Support: NC TraCS Institute: 2KR1091802  
Principal Investigators: Zamboni W; Jarstfer M  
Total Direct Funding: \$2,000  
Total Period of Support: 01/01/19 – 12/31/19  
Percent Effort: 5% Effort / 5% Salary  
Project Title: In vitro selection of non-binding ssDNA oligos with high serum nuclease resistance

Source of Support: 1 R43 CA228938-01 SBIR: Phase I Proposal: CBT Pharmaceuticals  
Principal Investigators: Reddy M, W Zamboni  
Total Direct Funding: \$48,500 (for Zamboni)  
Total Period of Support: 09/20/18 – 02/28/20  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Combination of checkpoint inhibitors UNC: Evaluation of the Interaction between CBT-501 & CBT-502 and the Mononuclear

Source of Support: NSF ASSIST Pilot Study Year 6 – NC State University  
Principal Investigators: D Carpenter (Co-PI); W Zamboni (Co-PI); Michael Daniele (Co-I)  
Total Direct Funding: \$59,936  
Total Period of Support: 11/01/17 – 10/31/18  
Percent Effort: 10% Effort / 0% Salary

Project Title: Evaluation of the Pharmacokinetics of Lisinopril and Tracer Compounds in Sweat, Saliva, and Plasma to Inform the Design of a Non-Invasive Wearable Sensor to Detect Medication Adherence

Source of Support: NIH/NCI Experimental Therapeutics-Clinical Trials Network with Phase 1 Emphasis (ET-CTN) (UM1)

Principal Investigators: W Zamboni

Total Direct Funding: \$26,540

Total Period of Support: 11/01/17 – 10/31/18

Percent Effort: 2% Effort / 2% Salary

Project Title: Pharmacokinetic Analyses of 9922 as part of Phase 1/2 Clinical Trials of 9922

Source of Support: 1U54CA198999-01 – CCNE Pilot Grant

Principal Investigators: Zamboni W

Total Direct Funding: \$49,885

Total Period Support: 08/01/17-10/31/18

Percent Effort: 5% effort/ 0% salary

Project Title: Evaluation of nanoparticle drug delivery to tumors: Effects of Pharmacokinetic study design and metrics on delivery to tumors

Source of Support: NCTraCs

Principal Investigators: D Lawrence D

Total Direct Funding: \$15,839

Total Period of Support: 05/01/17 – 12/31/18

Co-Investigator: W Zamboni

Percent Effort: 3% Effort / 3% Salary

Project Title: Assay development and validation for quantitation of CY5-B12-docetaxel and photocleaved docetaxel + short chain in mouse plasma and tumors

Source of Support: NIH / NCI (2-P30-CA016086)

Principal Investigators: S Earp (PI of Pharmacology Core: W Zamboni)

Total Direct Funding: \$110,843/yr

Total Period of Support: 12/01/16 – 11/30/21

Percent Effort: 10% Effort / 10% Salary for Zamboni

Project Title: Cancer Center Support Grant

Source of Support: UNC Eshelman Institute for Innovation – Student/Postdoc Fellow

Principal Investigators: A Lucas; W Zamboni (Advisor)

Total Direct Funding: \$25,000

Total Period of Support: 08/01/16 – 12/31/17

Percent Effort: 10% Effort / 0% Salary

Project Title: Phenotypic Probe to Individualize the Treatment of Monoclonal Antibodies and Antibody Drug Conjugates

Source of Support: Center for Translational Cancer Nanomedicine at Northeastern University

Principal Investigators: W Zamboni

Total Direct Funding: \$14,000

Total Period of Support: 02/01/16 – 05/31/16

Percent Effort: 2% Effort / 2% Salary

Project Title: ICP-MS Analysis of Platinum (Pt) in Blood, Kidney, Liver, Lung, and Heart as Part of the Study of Pharmacokinetic Analysis of Platinum Derivatives Following Systemic Administration in Mice

Source of Support: 1U54CA198999-01 – CCNE – Pilot Grant Program

Principal Investigators: S Chang, W Zamboni

Total Direct Funding: \$50,000

Total Period of Support: 12/01/15 – 11/31/16  
 Percent Effort: 5% Effort / 0% Salary  
 Project Title: Enhancing Tumor Delivery of Nanoparticle Anticancer Agents using Microbeam Radiation Therapy

Source of Support: NIH R01 - 5R01CA184088-05  
 Principal Investigators: A Kabanov (Lead PI), W Zamboni (Co-PI)  
 Total Direct Funding: \$1,494,965  
 Total Period Support: 12/01/2015 – 11/31/2020 (in NCE)  
 Percent Effort: 10% Effort/ 10% Salary  
 Project Title: Liposomal Doxorubicin and Pluronic Combination for Cancer Therapy

Source of Support: UNC LCCC Pilot Study  
 Principal Investigators: D Darr, W Zamboni  
 Total Direct Funding: \$20,000  
 Total Period of Support: 10/01/15 – 09/30/16  
 Percent Effort: 0% Effort / 0% Salary  
 Project Title: Analytical and PK studies of S1 in mice

Source of Support: UNC Eshelman Institute for Innovation  
 Principal Investigators: D Carpenter, A Sage, W Zamboni  
 Total Direct Funding: \$50,000  
 Total Period of Support: 10/01/15 – 09/30/16  
 Percent Effort: 5% Effort / 0% Salary  
 Project Title: Creating the first non-invasive wearable technology to continuously monitor and improve patient medication adherence.

Source of Support: 1U01CA198910-01  
 Principal Investigators: Kabanov, Bronich, Liu  
 Total Direct Funding: \$449,982  
 Total Period Support: 09/01/2015-8/31/2020 (in NCE)  
 Co-Investigator: W Zamboni  
 Percent Effort: 10% effort/10% salary  
 Project Title: Targeted Core Shell Nanogels for Triple Negative Breast Cancer

Source of Support: 1U54CA198999-01 - CCNE  
 Principal Investigators: Huang (Contact PI) Project 4 PI: Kabanov  
 Total Direct Funding: Project 4 \$343,636  
 Total Period Support: 9/01/2015-7/31/2020  
 Co-Investigator: W Zamboni  
 Percent Effort: 7% effort/ 7% salary  
 Project Title: Nano Approaches to Modulate Host Cell Response for Cancer Therapy; Project 4 Title: High-Capacity Polymeric Micelle Therapeutics for Lung Cancer

Source of Support: UNC Eshelman Institute for Innovation  
 Principal Investigators: W Zamboni, S Chang  
 Total Direct Funding: \$50,000  
 Total Period of Support: 08/01/15 – 09/30/16  
 Percent Effort: 5% Effort / 0% Salary  
 Project Title: Enhancing Tumor Delivery of Nanoparticle Anticancer Agents using Microbeam Radiation Therapy

Source of Support: UNC Research Opportunity  
 Principal Investigators: Lai S  
 Total Direct Funding: \$480,000  
 Total Period of Support: 07/01/15 – 06/30/18

Co-Investigator: W Zamboni  
Percent Effort: 0% Effort / 0% Salary (no salary allowed/requested)  
Project Title: Research Program in Immunoengineering

Source of Support: NCSU College of Veterinary Medicine Pilot Grant  
Principal Investigators: M Risselada, K Messenger, W Zamboni  
Total Direct Funding: \$11,930  
Total Period of Support: 04/24/15 – 12/31/15  
Percent Effort: 2% Effort / 2% Salary  
Project Title: Subcutaneous administration of carboplatin in pluronic F127 in a rodent model

Source of Support: NIH 1R21EB017938-01  
Principal Investigators: S Lai  
Total Direct Funding: \$125,000/yr x 2 yrs  
Total Period of Support: 09/01/2014 – 08/31/16  
Co-Investigator: W Zamboni  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Prevalence and characteristics of anti-PEG antibodies in humans

Source of Support: UNC LCCC Developmental Research Awards 2014  
Principal Investigators: W Zamboni  
Total Direct Funding: \$50,000  
Total Period of Support: 08/01/2014 – 07/31/2016  
Percent Effort: 5% Effort / 0% Salary  
Project Title: Evaluation of Mediators of Mononuclear Phagocyte System (MPS) Function and Nanoparticle Pharmacology in Obese and Non-Obese Patients with Ovarian and Endometrial Cancer enrolled on the UNC Cancer Survivorship Cohort (CSC)

Source of Support: NIH 1R21EB017938-01  
Principal Investigators: S Lai  
Total Direct Funding: \$125,000/yr x 2 yrs  
Total Period of Support: 09/01/2014 – 08/31/16  
Co-Investigator: W Zamboni  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Prevalence and characteristics of anti-PEG antibodies in humans

Source of Support: UNC LCCC Developmental Research Awards 2014  
Principal Investigators: W Zamboni  
Total Direct Funding: \$50,000  
Total Period of Support: 08/01/2014 – 07/31/2016  
Percent Effort: 5% Effort / 0% Salary  
Project Title: Evaluation of Mediators of Mononuclear Phagocyte System (MPS) Function and Nanoparticle Pharmacology in Obese and Non-Obese Patients with Ovarian and Endometrial Cancer enrolled on the UNC Cancer Survivorship Cohort (CSC)

Source of Support: NIH/NCI Experimental Therapeutics-Clinical Trials Network with Phase 1 Emphasis (ET-CTN) (UM1).  
Principal Investigators: C Dees, H Hurwitz  
Total Period of Support: 07/01/14 – 06/30/20  
Co-Investigator: W Zamboni (Director of Pharmacology Core)  
Percent Effort: 1% Effort / 1% Salary

Source of Support: The Ben and Catherine Ivy Foundation – Ivy Brain Tumor Program  
Principal Investigators: M Berens (PI of Pharmacology subcontract: W Zamboni)  
Total Direct Funding: \$150,000  
Total Period of Support: 07/01/14 – 06/30/16

Percent Effort: 5% Effort / 5% Salary  
 Project Title: Delivery of Targeted Drugs Across the Blood Brain Barrier to Treat Glioblastoma

Source of Support: U. S. FDA  
 Principal Investigators: Y Cao  
 Total Direct Funding: \$460,000  
 Total Period of Support: 01/01/14 – 12/31/17  
 Co-Investigator: W Zamboni  
 Percent Effort: 2% Effort / 2% Salary  
 Project Title: Physiologically Based Pharmacokinetic Model for Drugs Encapsulated into Liposomes

Source of Support: NIH / NCI (1 U54 CA151652-01) – Alliance Challenge Project (ACP)  
 Principal Investigators: W Zamboni, A Kabanov  
 Total Direct Funding: \$55,000/yr  
 Total Period of Support: 07/01/13 – 04/30/15  
 Percent Effort: 2% Effort / 2% Salary for Zamboni  
 Project Title: Pegylated Liposomal Doxorubicin (PLD) in Combination with Pluronic for Treatment of Ovarian and Breast Cancer

Source of Support: Lilly Research Awards Program (LRAP)  
 Principal Investigators: WC Zamboni  
 Total Direct Funding: \$98,000/yr x 1 yr  
 Total Period of Support: 06/01/13 – 05/31/15  
 Percent Effort: 10% Effort / 10% Salary  
 Project Title: A High Throughput Screening Platform to Evaluate the Interactions between Nanoparticle and Non-Nanoparticle Agents and the Mononuclear Phagocyte System (MPS) in Humans and Animal Models

Source of Support: Lilly Research Awards Program (LRAP)  
 Principal Investigators: WC Zamboni  
 Total Direct Funding: \$98,000/yr x 1 yr  
 Total Period of Support: 06/01/13 – 05/31/15  
 Percent Effort: 10% Effort / 10% Salary  
 Project Title: A High Throughput Screening Platform to Evaluate the Interactions between Nanoparticle and Non-Nanoparticle Agents and the Mononuclear Phagocyte System (MPS) in Humans and Animal Models

Source of Support: NIH RO1 DA023690  
 Principal Investigators: L Tarantino, T Wiltshire  
 Total Period of Support: 03/01/13 – 06/30/18  
 Co-Investigator: W Zamboni  
 Total Direct Funding: \$75,500/year  
 Percent Effort: 5% Effort / 5% Salary for Zamboni  
 Project Title: Organismal and Genetic Networks in Drug Reward and Reinforcement

Source of Support: NCI SBIR Phase II Grant: Multifunctional Therapeutics Based on Nanotechnology (N44CO-17019-36)  
 Principal Investigators: B Oberhardt (PI of Pharmacology subcontract: W Zamboni)  
 Total Direct Funding: \$245,000  
 Total Period of Support: 09/28/12 – 09/27/14  
 Percent Effort: 5% Effort / 5% Salary  
 Project Title: NanoVector Phase II SBIR: Multifunctional Therapeutics using Engineered Plant Virus Nanoparticles

Source of Support: American Cancer Society Grant  
 Principal Investigators: CK Anders

Total Direct Funding: \$100,000  
Total Period of Support: 07/01/12 – 08/31/14  
Co-Investigator/Mentor: W Zamboni  
Percent Effort: 2% Effort / 2% Salary  
Project Title: PARP Inhibition to Treat Triple-Negative Breast Cancer Brain Metastases

Source of Support: NC TraCS Pilot Grant  
Co-Principal Investigators: C Anders, R Miller  
Total Period of Support: 07/01/12 – 06/30/14  
Co-Investigator: W Zamboni  
Total Direct Funding: \$50,000  
Percent Effort: 0% Effort / 0% Salary for Zamboni  
Project Title: Nanoparticle Anticancer agents for the Treatment of Metastatic Central Nervous System Malignancies

Source of Support: American Brain Tumor Association Discovery Grant  
Principal Investigator: W Zamboni  
Total Period of Support: 07/01/12 – 06/30/13  
Total Direct Funding: \$50,000  
Percent Effort: 2% Effort / 2% Salary for Zamboni  
Project Title: Nanoparticle Agents for the Treatment of Metastatic Central Nervous System Malignancies

Source of Support: NIH / NCI (1 U54 CA151652-01) – Alliance Challenge Project (ACP)  
Principal Investigators: W Zamboni, P Decuzzi  
Total Direct Funding: \$40,000/yr  
Total Period of Support: 07/01/12 – 06/30/13  
Percent Effort: 5% Effort / 5% Salary for Zamboni  
Project Title: A High Throughput Screening Platform with Mathematical Modeling to Evaluate the Interactions between Nanoparticle Agents and the Mononuclear Phagocyte System (MPS)

Source of Support: NIH K23  
Principal Investigators: CK Anders  
Total Direct Funding: \$9,000  
Total Period of Support: 09/01/11 – 08/31/13  
Co-Investigator/Mentor: W Zamboni  
Percent Effort: 0% Effort / 0% Salary  
Project Title: PARP Inhibition to Treat Triple-Negative Breast Cancer Brain Metastases

Source of Support: NC TraCS 10KR101122  
Principal Investigator: G Song; W Zamboni  
Total Direct Funding: \$10,000  
Total Period of Support: 09/01/11 – 08/31/12  
Percent Effort: 0% Effort / 0% Salary  
Project Title: Relationship between Monocytes Phagocyte System (MPS) in Tumors and Tumor Delivery and Efficacy of Nanoparticle Anticancer Agents in Genetically Engineered Mouse Models of Breast Cancer

Source of Support: NIMH (1R01MH093372-01A1)  
Principal Investigator: B Philpot  
Total Direct Funding: \$8,700  
Total Period of Support: 09/01/11 – 08/31/12  
Co-Investigator/Mentor: W Zamboni  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Epigenetic Regulation of Ube3a as a Treatment for Angelman Syndrome

Source of Support: NIH RO1 EB008733-01  
Principal Investigator: P Dayton  
Total Period of Support: 03/01/11 – 02/28/14  
Co-Investigator: WC Zamboni  
Total Direct Funding: \$57,500/yr x 2 yrs  
Percent Effort: 7.5% Effort / 7.5% Salary  
Project Title: Precision Engineering of Ultrasonically-Targeted Drug Delivery Vehicles

Source of Support: NIH / NIAID BAA-NIAID-DAIT-NIHAI2009060  
Principal Investigators: M Jay, R Mumper, W Zamboni  
Total Direct Funding: \$4,563,828 (Total Grant Funding)  
Total Period of Support: 09/30/10 – 09/29/13  
Percent Effort: 10% Effort / 10% Salary for Zamboni  
Project Title: Development of Improved DTPA for Radionuclide Chelation – Phase IV.

Source of Support: NIH / SAIC S10-155  
Principal Investigators: J Hrkach, WC Zamboni  
Total Direct Funding: \$120,993  
Total Period of Support: 09/01/10 – 08/31/11  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Pharmacologic Studies of BIND-Vincristine in Non-human Primates

Source of Support: NIH / NCI (1 U54 CA151652-01)  
Principal Investigators: J DeSimone (PI of Pharmacology Core: W Zamboni)  
Total Direct Funding: \$99,701  
Total Period of Support: 09/01/10 – 08/31/15  
Percent Effort: 10% Effort / 10% Salary for Zamboni  
Project Title: Carolina Center of Cancer Nanotechnology Excellence

Source of Support: NC TraCS Institute  
Principal Investigator: W Caron; W Zamboni (Faculty Advisor)  
Total Direct Funding: \$10,000  
Total Period of Support: 07/01/10 – 06/31/11  
Percent Effort: 0% Effort / 0% Salary  
Project Title: Development of an *Ex Vivo* Phenotypic Probe to Guide Pegylated Liposomal Doxorubicin (Doxil) Therapy in Patients

Source of Support: NIH RO1 DA023690  
Co-PIs: L Tarantino, T Wiltshire  
Total Period of Support: 07/01/09 – 06/30/11  
Co-Investigator: W Zamboni  
Total Direct Funding: \$75,554/yr x 2 yrs  
Percent Effort: 5% Effort / 5% Salary for Zamboni  
Project Title: Organismal and Genetic Networks in Drug Reward and Reinforcement

Source of Support: PA-06-134 / NIAID Advanced Technology SBIR  
Principal Investigators: N Sharpless  
Total Direct Funding: \$65,384  
Total Period of Support: 04/01/09 – 03/31/10  
Co-Investigator: WC Zamboni  
Percent Effort: 0% Effort / 0% Salary for Zamboni  
Project Title: G-Zero Therapeutics

Source of Support: NIH/NCI CA119343 – CCNE Pilot Grant

Co-PIs: William C. Zamboni; Paola Gehrig  
Total Direct Funding: \$50,000  
Total Period of Support: 01/01/09 – 12/31/11  
Percent Effort: 0% Effort / 0% Salary  
Project Title: Carolina Center for Cancer Nanotechnology Excellence Pilot Grant: Study Evaluating Measures of the Reticuloendothelial System as Predictors of Doxil Pharmacokinetic and Pharmacodynamic Disposition in Patients with Refractory Ovarian Cancer

Source of Support: UNC LCCC University Cancer Research Fund  
Co-PIs: W Zamboni; P Gehrig  
Total Direct Funding: \$125,000  
Total Period of Support: 01/01/09 – 12/31/10  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Study Evaluating Measures of the Reticuloendothelial System as Predictors of Doxil Pharmacokinetic and Pharmacodynamic Disposition in Patients with Refractory Ovarian Cancer

Source of Support: NIH / NCI P42 Grant  
Principal Investigator: Jon Serody  
Total Direct Funding: \$250,000  
Total Period of Support: 12/01/08 – 12/01/10  
Co-Investigator: William C. Zamboni, Pharm.D., Ph.D.  
Percent Effort: 0% Effort / 0% Salary  
Project Title: STTR Phase II Grant: Blockage of NF-Kappa B for Prevention/Treatment of GVHD

Source of Support: NIH / NCI 3U54CA119343-05S2  
Principal Investigators: J DeSimone; W Zamboni  
Total Direct Funding: \$74,500  
Total Period of Support: 07/01/08 – 12/31/10  
Percent Effort: 4% Effort / 4% Salary  
Project Title: Characterization of PRINT Nanoparticles Using SKOV-3 Mouse Model

Source of Support: NIH / NIAID HHSN266200500045P  
Co-PI:s M Jay; W Zamboni; R Mumper  
Total Period of Support: 07/01/08 to 09/29/09  
Total Direct Funding: \$100,115/yr  
Percent Effort: 12.5% Effort / 12.5% Salary  
Project Title: Development of Improved DTPA for Radionucleotide Chelation

Source of Support: NIH / NIDDKD: Nanoscience and Nanotechnology in Biology and Medicine  
Principal Investigator: E Wiener  
Total Period of Support: 07/01/07 to 08/30/12  
Co-Investigator: W Zamboni  
Total Direct Funding: \$84,739/yr  
Percent Effort: 10% Effort / 10% Salary  
Project Title: A New Dimension in Renal Clearance Design Criteria for Dendrimer Nanostructures

### **UNC – Past Contracts:**

Source of Support: Meryx, Inc. (Task 5)  
Principal Investigators: Zamboni W  
Total Direct Funding: \$65,000  
Total Period of Support: 02/01/20 – 02/01/22  
Percent Effort: 5% Effort / 5% Salary



Project Title: Quantitation of MRX-2843 and Metabolites in Plasma in a Phase I Dose Escalation Study of the Safety, Pharmacokinetics, and Pharmacodynamics of MRX-2843 and Osimertinib in Adult Subjects with Relapsed/Refractory Leukemias

Source of Support: Meryx (Tasks 1-4 and 6)  
Principal Investigators: Zamboni W  
Total Direct Funding: \$254,598  
Total Period of Support: 02/01/18 – 02/01/22  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Analytical and Pharmacokinetic Studies of MRX-2843 and metabolite(s) in Plasma and Urine as part of the Phase 1 Dose Escalation Study of the Safety, Pharmacokinetics and Pharmacodynamics of MRX-2843 in Adult Subjects with Refractory Solid Tumors

Source of Support: OBI Pharma  
Principal Investigators: W Zamboni  
Total Direct Funding: \$131,885  
Total Period of Support: 06/01/20 – 12/31/21  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Measurement of the cell-associated exposures of human IgG1, Herceptin and OBI-898 (anti-SSEA-4 antibody) in circulating peripheral blood mononuclear cells by LC-MS/MS in patients with non-small cell lung cancer (NSCLC)

Source of Support: ChemoGLO  
Principal Investigators: Zamboni W  
Total Direct Funding: \$28,850  
Total Period of Support: 03/01/17 – 03/31/21  
Percent Effort: 2.5% Effort / 2.5% Salary  
Project Title: Monoclonal antibody IgG1 quantitation from laboratory bench surfaces

Source of Support: NanoValent Pharmaceuticals, Inc.  
Principal Investigators: W Zamboni  
Total Direct Funding: \$230,000  
Total Period of Support: 06/01/20 – 05/31/21  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Task#1: Preclinical characterization & evaluation of a targeted nanosphere formulation of CPT-11 (NV-103) by LC-MS/MS in mice to improve treatment of Ewing sarcoma as part of Pharmacologic development & evaluation of NV-103

Source of Support: Gloytics  
Principal Investigators: Zamboni W  
Total Direct Funding: \$52,024  
Total Period of Support: 08/01/17 – 07/31/18  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Measure MPS Biomarkers in Blood as Part of Clinical Studies of MVT-5873

Source of Support: Gloytics  
Principal Investigators: Zamboni W  
Total Direct Funding: \$75,218  
Total Period of Support: 02/01/17 – 07/31/19  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Evaluation of Function and Hormone Mediators of Mononuclear Phagocyte System (MPS) for MM-310-01-01-01 Study

Source of Support: Gloytics

Principal Investigators: Zamboni W  
Total Direct Funding: \$77,024  
Total Period of Support: 02/01/17 – 01/31/19  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Exploratory Analysis to Address Whether the Mononuclear Phagocyte System (MPS) Contributes to Faster Clearance of mAbs/ADCs in Advanced Gastric Cancer (AGC) Compared with Metastatic Breast Cancer (MBC) and Other Solid Tumors

Source of Support: ZY Therapeutics  
Principal Investigators: Zamboni W  
Total Direct Funding: \$42,310  
Total Period of Support: 02/01/17 – 06/30/17  
Percent Effort: 3% Effort / 3% Salary  
Project Title: Separation and quantitation of ZY-101 drug forms in rat plasma

Source of Support: NexImmune  
Principal Investigators: W Zamboni  
Total Direct Funding: \$61,672  
Total Period of Support: 08/01/15 – 03/31/16  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Assay Development and Validation for Quantitation of Kb-SIY-dimer and anti-CD28 ligands in Solution for CMC Studies by High Resolution Mass Spectrometry (HRAM)

Source of Support: Nemucore  
Principal Investigators: W Zamboni  
Total Direct Funding: \$75,000  
Total Period of Support: 07/01/14 – 06/30/16  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Development of Pt and Gd containing Nano-emulsions

Source of Support: Onyx Pharmaceuticals  
Principal Investigators: W Zamboni  
Total Direct Funding: \$125,820  
Total Period of Support: 06/01/2014 – 05/31/15  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Evaluation of the pharmacodynamics, pharmacokinetics and efficacy of PEGylated liposomal carfilzomib and non-liposomal carfilzomib in female nu/nu mice bearing orthotopic A549 NSCLC tumors. The A549 NSCLC cells are luciferase expressing cell lines.

Source of Support: Merrimack Pharmaceuticals  
Principal Investigators: W Zamboni  
Total Direct Funding: \$156,000  
Total Period of Support: 06/01/2014 – 02/28/2015  
Percent Effort: 10% Effort / 10% Salary  
Project Title: Evaluation of Tumor Profiling, Imaging, Pharmacokinetics and Efficacy of Liposomal Anticancer Agents in Preclinical Tumor Models

Source of Support: Hoffman-La Roche, Inc.  
Principal Investigators: J Shields, WC Zamboni  
Total Direct Funding: \$35,000 (\$17,500 for Zamboni)  
Total Period of Support: 02/01/12 – 01/31/13  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Assessment of RO5212054/PLX3603 to 1) radiosensitize B-Raf mutant melanoma cells in vitro and 2) radiosensitize and/or inhibit melanoma brain tumor growth in vivo

Source of Support: SciDose, LLC  
Principal Investigators: WC Zamboni  
Total Direct Funding: \$97,994  
Total Period of Support: 09/01/11 – 08/30/12  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Evaluation of the protein binding for novel formulations of Docetaxel

Source of Support: Bayer HealthCare AG  
Principal Investigators: R Goldberg; WC Zamboni  
Total Direct Funding: \$129,134  
Total Period of Support: 02/01/11 – 07/01/14  
Percent Effort: 10% Effort / 10% Salary  
Project Title: Pharmacokinetic Study of IHL=305  
Alone and in Combination with Regorafenib as Part of the Placebo-Controlled Phase II Study of Regorafenib in Combination with FOLFIRI as Second-Line Therapy in Patients with K-RAS or BRAF Mutant Metastatic Colorectal Cancer

Source of Support: Mallinckrodt/Covidien  
Principal Investigators: WC Zamboni  
Total Direct Funding: \$196,910  
Total Period of Support: 02/01/11 – 08/01/11  
Percent Effort: 10% Effort / 10% Salary  
Project Title: Pharmacokinetic Screening of PEGylated Liposomal Formulations of Cisplatin in nu/nu Female Mice Bearing KB Human Nasopharyngeal Xenografts

Source of Support: Mallinckrodt/Covidien  
Principal Investigators: WC Zamboni  
Total Direct Funding: \$196,910  
Total Period of Support: 02/01/11 – 08/01/11  
Percent Effort: 10% Effort / 10% Salary  
Project Title: Pharmacokinetic Screening of PEGylated Liposomal Formulations of Cisplatin in nu/nu Female Mice Bearing KB Human Nasopharyngeal Xenografts

Source of Support: SciDose, LLC  
Principal Investigators: WC Zamboni  
Total Direct Funding: \$252,994  
Total Period of Support: 10/01/10 – 09/30/11  
Percent Effort: 7.5% Effort / 7.5% Salary  
Project Title: Pharmacology Studies of Curcumin-Succinate-PEG400 Conjugate compared with Curcumin In Vitro Systems and Tumor Models

Source of Support: Mallinckrodt/Covidien  
Principal Investigators: WC Zamboni  
Total Direct Funding: \$275,910  
Total Period of Support: 07/01/10 – 05/30/11  
Percent Effort: 10% Effort / 10% Salary  
Project Title: Efficacy and Pharmacology Studies of Folr1 Ab-SPI-077 compared with SPI-077 in Mice Bearing KB Human Nasopharyngeal Xenografts

Source of Support: Carmel Pharma  
Principal Investigators: W Zamboni  
Total Direct Funding: \$40,500/year  
Total Period of Support: 05/01/10 – 04/30/15  
Percent Effort: 2% Effort / 2% Salary  
Project Title: ChemoGLO Kits and Reference Laboratory for Chemotherapy Environmental Contamination in Pharmacies and Healthcare Areas

Source of Support: Mersana Therapeutics, Inc.  
Principal Investigators: WC Zamboni  
Total Direct Funding: \$221,332  
Total Period of Support: 05/01/09 – 08/30/10  
Percent Effort: 10% Effort / 10% Salary for Zamboni  
Project Title: Assay Development and LC-MS/MS Analysis as part of the Study Evaluating Plasma, Tissue, and Tumor PK of XMT-1001 and CPT-11 in Mice Bearing HT-29 Human Colon Carcinoma Xenografts

Source of Support: Carmel Pharma  
Principal Investigators: WC Zamboni  
Total Direct Funding: \$68,279  
Total Period of Support: 05/01/09 – 04/30/10  
Percent Effort: 2.5% Effort / 2.5% Salary for Zamboni  
Project Title: Development of Wipe Sampling Kits, Methods, and Analytical Assays for Paclitaxel and Docetaxel as Related to Environmental Contamination in Pharmacies and Healthcares Areas

Source of Support: Hana Biosciences, Inc.  
Principal Investigator: William C. Zamboni, PharmD, PhD  
Total Direct Funding: \$72,000  
Total Period of Support: 05/01/08 – 5/01/10  
Percent Effort: 15% Effort / 15% Salary Support  
Project Title: Analytical Studies of Encapsulated, Released, and Sum Total Topotecan in Plasma as part of the Phase I Study of TLI

Source of Support: Sanofi-Aventis Oncology  
Principal Investigators: R Edwards, K Zorn, WC Zamboni  
Total Direct Funding: \$125,000  
Total Period of Support: 07/01/07 – 10/01/10  
Percent Effort: 8% Effort / 8% Salary  
Project Title: Parallel Phase I Studies of Docetaxel IV in combination with Oxaliplatin IP and Docetaxel IP in combination with Oxaliplatin IV in patients with Persistent or Recurrent Ovarian Cancer

#### **Internal UNC Projects Administered Via Recharge Center – Past:**

Source of Support: NINDS (R01NS097507)  
Principal Investigator(s): Kristy Ainslie  
Total Direct Funding: \$3,084.32  
Total Period of Support: 10/14/19– 04/14/20  
Percent Effort: 1% Effort / 1% Salary  
Project Title: Pharmacokinetic study of paclitaxel (PTX) in mouse brain via interstitial drug delivery (PTX scaffold)

#### **University of Pittsburgh – Past Grants:**

Source of Support: Scaife Foundation Grant for Ovarian Cancer Research  
Principal Investigator: William C. Zamboni  
Total Direct Funding: \$50,000  
Total Period of Support: 09/01/06 – 05/01/08  
Percent Effort: 5% Effort / 5% Salary

Project Title: Pilot Study Evaluating Phenotypic Measures of the Reticuloendothelial System as Predictors of Doxil Pharmacokinetic and Pharmacodynamic Disposition in Patients with Refractory Ovarian Cancer

Source of Support: NIH RO1 (Grant PI: Jennifer Grandis)  
Co-Investigator: W.C. Zamboni  
Total Direct Funding: \$197,020  
Total Period of Funding: 07/01/04 – 12/31/06  
Percent Effort: 10% Effort / 10% Salary  
Project Title: Stat3 as a Therapeutic Target in Head and Neck Cancer

Source of Support: Pittsburgh Foundation  
Co-Investigator: W.C. Zamboni  
Total Direct Funding: \$24,319  
Total Period of Funding: 07/01/04 – 06/30/06  
Project Title: The Role of Pharmacogenetics in Development of Individualized Chemotherapy for Women with Advanced Ovarian Cancer

Source of Support: NIH  
Principal Investigator: Chandra Belani  
Total Direct Funding: \$480,382  
Total Period of Support: 12/01/01 – 11/30/06  
Percent Effort: 2.5% Effort / 2.5% Salary  
Project Title: Phase I Clinical Trials of Novel Anticancer Agents

Source of Support: ACCP– Aventis Oncology Fellowship  
Principal Investigator: William C. Zamboni  
Total Direct Funding: \$30,000  
Total Period of Support: 07/01/01 – 07/01/02  
Percent Effort: 10% Effort / 0% Salary  
Project Title: Evaluation of Cisplatin Tumor Disposition Using Microdialysis in Patients with Melanoma.

Source of Support: NIH, NCI  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$47,061  
Total Period of Support: 04/01/01 - 03/30/02  
Percent Effort: 5% Effort / 0% Salary  
Project Title: STTR Phase I Grant R41-CA91700: Potent Topoisomerase I inhibition by the Silatecan, DB-67

Source of Support: The American Academy of Otolaryngology-Head and Neck Surgery Foundation  
Principal Investigator: Paul L. Leong  
Total Direct Funding: \$6,000  
Total Period of Support: 08/01/00 to 07/31/01  
Percent Effort: 5% Effort / 0% Salary  
Project Title: Targeting Activated Stat3 in HNSCC

Source of Support: Papa John's / V Foundation  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$5,000  
Total Period of Support: 07/01/00 to 06/30/01  
Percent Effort: 0% Effort / 0% Salary  
Project Title: Factors Affecting the Tumor Disposition of Anticancer

Source of Support: NIH / NCI  
Identification No.: RFP NCI N01-CM-97019-58  
Principal Investigator: M.J. Egorin  
Total Direct Funding: \$1,159,960  
Total Period of Support: 12/1/99 to 12/01/04  
Percent Effort: 10% Effort / 10% Salary  
Project Title: Preclinical Pharmacologic Studies of Antitumor Agents

Source of Support: American College of Clinical Pharmacy and Rhone-Poulenc Rorer Pharmaceuticals Inc.  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$10,000  
Total Period of Support: 7/1/99 to 6/30/00  
Percent Effort: 10% Effort / 0% Salary  
Project Title: Disposition of Liposomal-Cisplatin (SPI-77) and Cisplatin in Solid Tumors

#### **University of Pittsburgh – Past Contracts:**

Source of Support: Sanofi-Aventis Pharmaceuticals, Inc. (Grant PI: Dr. Levi Downs, Univ. of Minnesota)  
Principal Investigator: W.C. Zamboni, Pharm.D., Ph.D.  
Total Direct Funding: \$35,658  
Total Period of Support: 07/01/07 – 10/01/09  
Percent Effort: 5% Effort / 5% Salary  
Project Title: LC-MS and Pharmacokinetics of Docetaxel as Part of Phase I Trial of Docetaxel as a Continuous IV infusion in Patients with Advanced Ovarian Cancer

Source of Support: Hana Biosciences, Inc.  
Principal Investigator: William C. Zamboni  
Total Direct Funding: \$84,441  
Total Period of Support: 05/01/07 – 5/01/08  
Percent Effort: 10% Effort / 10% Salary Support  
Project Title: Development of Sample Processing Methods and LC-MS Assay for the Measurement of Liposomal Encapsulated and Released Drug for Liposomal Topotecan in Human Plasma

Source of Support: GlaxoSmithKline  
Principal Investigator: William C. Zamboni  
Total Direct Funding: \$55,576  
Total Period of Support: 10/01/06 – 10/01/07  
Percent Effort: 15% Effort / 15% Salary  
Project Title: Pharmacokinetic Studies of Carboplatin Alone and In Combination with Lapatinib

Source of Support: ALZA Pharmaceuticals, Inc.  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$65,000  
Total Period of Support: 04/01/06 – 04/01/07  
Percent Effort: 10% Effort / 10% Salary  
Project Title: Evaluation between the disposition of STEALTH liposomal CKD-602 (S-CKD602) and the Reticuloendothelial System in Preclinical Tumor Models

Source of Support: ALZA Pharmaceuticals, Inc.

Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$50,000  
Total Period of Support: 04/01/06 – 04/01/07  
Percent Effort: 30% Effort / 30% Salary  
Project Title: Pharmacokinetic Analysis of STEALTH liposomal CKD-602 (S-CKD602) as part of a Phase I Study

Source of Support: SuperGen Pharmaceuticals, Inc.  
Co-Investigator: W.C. Zamboni  
Total Direct Funding: \$22,250  
Total Period of Funding: 10/01/04 – 07/01/05  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Disposition of 9NC and 9AC in Relation to ABC Genotypes

Source of Support: Sanofi-Aventis Pharmaceuticals, Inc.  
Principal Investigator: Joe Kelly, M.D.  
Co-Principal Investigator: W.C. Zamboni, Pharm.D., Ph.D.  
Total Direct Funding: \$66,850  
Total Period of Funding: 07/01/04 – 06/30/09  
Percent Effort: 15% Effort / 15% Salary  
Project Title: The use of MDR1 and CYP Pharmacogenetic Variables in Designing Individualized Therapy for the Treatment of Ovarian Cancer

Source of Support: SuperGen Pharmaceuticals, Inc.  
Co-Investigator: W.C. Zamboni  
Total Direct Funding: \$57,404  
Total Period of Funding: 02/01/04 – 01/31/05  
Percent Effort: 5% Effort / 5% Salary  
Project Title: PK Analysis of 9NC and 9AC as Part of the Study Evaluating the Effect of Food on the Oral Absorption of Rubitecan

Source of Support: SuperGen Pharmaceuticals, Inc.  
Co-Investigator: W.C. Zamboni  
Total Direct Funding: \$32,780  
Total Period of Funding: 10/01/03 – 07/01/05  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Bioequivalent Study of Two formulations of Rubitecan

Source of Support: Aventis and Sanofi Pharmaceuticals, Inc. (Grant PI: Jimmy Wong, MD, Georgetown University Cancer Ctr, Washington, DC)  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$85,600  
Total Period of Support: 08/01/03 – 10/31/07  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Phase I and Pharmacokinetic study of docetaxel and oxaliplatin

Source of Support: Aventis Pharmaceuticals, Inc. (Grant PI: Marwan Fakih, MD Roswell Cancer Center, Buffalo, NY)  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$40,000  
Total Period of Support: 04/01/03 – 10/01/07  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Phase I and Pharmacokinetic study of docetaxel, oxaliplatin, and cisplatin

Source of Support: ALZA Pharmaceuticals, Inc.  
Principal Investigator: W.C. Zamboni

Total Direct Funding: \$245,000  
Total Period of Support: 04/01/03 – 08/01/07  
Percent Effort: 25% Effort / 25% Salary  
Project Title: Plasma, tissue, and tumor disposition of STEALTH liposomal and non-liposomal CKD602 in preclinical models

Source of Support: ALZA Pharmaceuticals, Inc.  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$68,898  
Total Period of Support: 04/01/03 – 07/01/07  
Percent Effort: 12.5% Effort / 12.5% Salary  
Project Title: Phase I and pharmacokinetic study of STEALTH liposomal CKD602 in patients with refractory solid tumors

Source of Support: Aventis Pharmaceuticals, Inc.  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$32,000  
Total Period of Support: 04/01/03 – 10/01/05  
Percent Effort: 5% Effort / 5% Salary  
Project Title: HPLC and Pharmacokinetics of Docetaxel as Part of Phase I Study of Docetaxel and Capecitabine in Patients with Solid Tumors

Source of Support: Aventis Pharmaceuticals, Inc.  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$134,599  
Total Period of Support: 03/01/03 – 08/01/07  
Percent Effort: 15% Effort / 15% Salary  
Project Title: Plasma and tumor pharmacokinetics of EGFR AS oligonucleotide and docetaxel as part of the optimization of EGFR antisense oligonucleotides plus docetaxel for treatment of head and neck cancer

Source of Support: Aventis Pharmaceuticals, Inc. (Grant PI: Dr. Yuhchrau Chen, Univ. of Rochester Medical Center)  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$30,000  
Total Period of Support: 04/01/02 – 08/31/07  
Percent Effort: 5% Effort / 5% Salary  
Project Title: HPLC and Pharmacokinetics of Docetaxel as Part of Phase II Study of Triple-Agent Chemotherapy Followed by Pulsed Radiosensitizing Docetaxel and Radiation for NSCLC

Source of Support: Aventis Pharmaceuticals, Inc. (Grant PI: Kunle Odunsi, Roswell Cancer Center, Buffalo, NY)  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$42,500  
Total Period of Support: 04/01/02 – 08/31/07  
Percent Effort: 7.5% Effort / 7.5% Salary  
Project Title: Pharmacogenetic, Pharmacologic, and Pharmacokinetic Study of Docetaxel as Part of Phase II Study of Weekly Docetaxel in Patients with Relapsed Ovarian Cancer

Source of Support: Eli Lilly Pharmaceuticals, Inc. (Grant PI: Dr. Sridhar Mani, Montefiore University Hospital, NY, NY)  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$10,000  
Total Period of Support: 04/01/02 – 03/31/02  
Percent Effort: 5% Effort / 5% Salary



Project Title: HPLC and Pharmacokinetics of Gemcitabine as Part of the Phase I Trial of Gemcitabine, Oxaliplatin, and 5FU in Patients with Solid Tumors

Source of Support: Supergen Pharmaceutical Inc.  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$33,508  
Total Period of Support: 11/1/99 to 11/30/01  
Percent Effort: 5% Effort / 5% Salary  
Project Title: HPLC and Pharmacokinetic Analysis of 9-NC as Part of the Study Evaluating the Effect of Food on 9-NC Oral Absorption

Source of Support: Rhone-Poulenc Rorer Pharmaceutical Inc.  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$156,863  
Total Period of Support: 10/1/99 to 12/01/05  
Percent Effort: 5% Effort / 5% Salary  
Project Title: Evaluating the Response and Pharmacokinetics of the Combination of Docetaxel and 9-NC in Mice Bearing Tumor Xenografts

Source of Support: Supergen Pharmaceutical Inc.  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$60,616  
Total Period of Support: 10/1/99 to 10/30/01  
Percent Effort: 5% Effort / 5% Salary  
Project Title: HPLC and Pharmacokinetic Analysis of RFS2000 and its 9-AC Metabolite as Part of a Phase I Trial of RFS2000 in Patients with Refractory Solid Tumors

Source of Support: Supergen Pharmaceutical Inc.  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$58,900  
Total Period of Support: 7/1/99 to 6/30/01  
Percent Effort: 10% Effort / 10% Salary  
Project Title: HPLC and Pharmacokinetic Analysis of RFS2000 and its 9-AC Metabolite as Part of a Phase II Trial of RFS2000 in Patients with Advanced Colo-Rectal Cancer

Source of Support: Supergen Pharmaceutical Inc.  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$87,510  
Total Period of Support: 7/1/99 to 6/30/00  
Percent Effort: 15% Effort / 15% Salary  
Project Title: Evaluating the Relationship between Plasma Exposure of RFS2000 in Mice Bearing Human Colon Xenografts

#### **University of Maryland Cancer Center – Past Grants:**

Source of Support: NIH, NCI  
Identification No.: 1U01CA69854  
Principal Investigator: D. Van Echo  
Annual Total Direct Cost: \$271,551  
Total Period of Support: 3/1/98 to 2/28/03  
Percent Effort: 15% Effort / 15% Salary  
Project Title: Phase I Trials of Anticancer Agents

Source of Support: NIH, NCI  
Identification No.: REP NCI-CM-57199-12  
Principal Investigator: M.J. Egorin

Annual Total Direct Cost: \$172,429  
Total Direct Funding: \$938,279  
Total Period of Support: 3/1/98 to 11/30/99  
Percent Effort: 20% Effort / 10% Salary  
Project Title: Preclinical Pharmacological Studies of Antitumor and Anti-HIV Agents

**University of Maryland Cancer Center – Past Contracts:**

Source of Support: Sequus Pharmaceutical Inc.  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$47,061  
Total Period of Support: 3/15/99 to 3/14/00  
Percent Effort: 10% Effort / 0% Salary  
Project Title: Tumor Extracellular Fluid and Systemic Disposition of SPI-77 Alternative in Mice Bearing B16 Murine Melanoma Tumors

Source of Support: Sequus Pharmaceutical Inc.  
Principal Investigator: W.C. Zamboni  
Total Direct Funding: \$47,061  
Total Period of Support: 3/1/99 to 2/28/00  
Percent Effort: 10% Effort / 0% Salary  
Project Title: SPI-77 Tumor Extracellular Fluid and Systemic Disposition in Mice Bearing B16 Murine Melanoma Tumors

**St. Jude Children's Hospital – Past Grants:**

Source of Support: ACCP, Rhone-Poulenc Rorer  
Principal Investigator: C. F. Stewart; W Zamboni  
Total Direct Funding: \$22,000  
Total Period of Support: 7/1/97 to 6/30/98  
Percent Effort: 80% Effort / 75% Salary  
Project Title: Cerebrospinal Fluid Disposition of Topoisomerase I Inhibitors in the Nonhuman Primate Model

**RESEARCH STATEMENT**

**Summary of Accomplishments (2012 to Present):**

**Scholarship.** Since my promotion to Associate Professor with Tenure in January 2012, approximate 70% of my effort as a faculty member has been devoted to scholarship, with a focus on translational pharmacology

studies and the translational development of drugs, especially complex drugs such as nanoparticles, conjugates, biologics, antibodies, and antibody drug conjugates.

My research program has several high impact areas of research that are as listed below:

- 1) Translational Pharmacology Studies of Nanoparticle, Carrier Mediated Agents (CMA), and Biologics
- 2) Biomarkers for the Bi-Directional Interaction between Carrier-Mediated Agents (CMA) and the Innate Immune System (IIS) / Mononuclear Phagocyte System (MPS)
- 3) Biomarkers for the Relationship between the Innate Immune System (IIS) / Mononuclear Phagocyte System (MPS) and Pharmacokinetics (PK) and Pharmacodynamics (PD) of Monoclonal Antibodies (mAbs) and Antibody Drug Conjugates (ADCs)
- 4) Profiling and Modulating Factors that Inhibit the Tumor Delivery of Carrier-Mediated Agents (CMAs) and Biologics
- 5) Evaluation and Removal of Surface Exposures of Hazardous Drugs in Hospitals.

The significance, innovation, impact, and summary of my publications for each of these areas of research are described below in the section entitled **Major Research Accomplishments**.

I serve as the director of the UNC Advanced Translational Pharmacology and Analytical Chemistry (ATPAC) Lab and Recharge Center in the UNC Eshelman School of Pharmacy (ESOP), the UNC Lineberger Comprehensive Cancer Center (LCCC), and the Carolina Institute of Nanomedicine. The UNC ATPAC Lab consists of the UNC Translational Oncology and Nanoparticle Drug Development Initiative (TONDDI) Lab and the UNC LCCC Analytical Chemistry and Pharmacology Core (ACPC) Lab. The UNC ATPAC Lab supports research from my own lab, and highly collaborative and team science-based research with faculty members in the UNC ESOP, UNC LCCC, and CIN, as well as investigators from the National Institutes of Health, U.S. Food and Drug Administration, other academic research centers, and the pharmaceutical companies.

#### **Summary of Research Program:**

My research program is part of the Division of Pharmacotherapy and Experimental Therapeutics in the Eshelman School of Pharmacy at the University of North Carolina (ESOP). My research program is also part of UNC Lineberger Comprehensive Cancer Center (LCCC), and Carolina Institute of Nanomedicine (CIN). I am also the director of the UNC Advanced Translational Pharmacology and Analytical Chemistry (ATPAC) Lab. The UNC ATPAC Lab supports research from my own lab, and highly collaborative and team science-based research with faculty members in the UNC ESOP, UNC LCCC, and CIN, as well as investigators from the National Institutes of Health, U.S. Food and Drug Administration, other academic research centers, and the pharmaceutical companies. I consider myself as translational pharmacologists where I apply standard and novel analytical chemistry, pharmacology, pharmacokinetic, pharmacodynamic, and biomarker methods to preclinical, translational, and clinical development of drugs, especially anticancer agents.

I have been involved in translational development and pharmacology studies of small molecule drugs, nanoparticles, conjugates, biologics, and implantable agents for greater than 25 years. A majority of my work and interests has been on anticancer agents. My research interests focus on the application of pharmacokinetic, pharmacodynamic, phenotypic and pharmacogenetic principles in the optimization of the chemotherapeutic treatment of cancer. Information obtained from preclinical and clinical translational studies can greatly add to the understanding of the pharmacology of anticancer agents, allow for the rational design of therapeutic regimens, and permit individualization of treatment via precision medicine approaches.

A focus of my research is evaluating the processes and mechanisms associated with the delivery and distribution of anticancer agents into solid tumors. I am especially interested in identifying barriers to the delivery of agents into solid tumors and developing novel methods to measure these barriers. In addition, I am extremely interested into development novel technologies and modulators to overcome these barriers and increase the delivery and efficacy of anticancer agents in the treatment of solid tumors.

A second focus of my research is on the development of complex agents, such as nanoparticles, liposomes, conjugates, biologics, antibodies, and antibody drug conjugates (ADCs). As part of these studies, our group has developed methods and technologies to differentiate between the inactive-conjugated and active-released forms of these agents in blood, tumor, and tissues. I also focus on evaluating the bi-directional interaction between these agents and the mononuclear phagocyte system (MPS), which part of the innate immune system (IIS), and is the primary clearance pathway for these agents. We have developed biomarkers of the IIS/MPS, which can be used to predict the pharmacokinetics, pharmacodynamics, and the potential for drug-drug and drug-disease

interactions of these complex agents, especially immune-oncology agents, antibodies, and nanoparticles. The IIS/MPS biomarkers are also being evaluated as a method to optimize the dose and regimen of these complex agents, in special populations, such as in obesity, inflammatory diseases, and COVID-19 infection.

In summary, the clinical relevance of my research is underscored by the need to optimize the selection of the best agent, dose, regimen, and combination therapies for the treatment of cancer and other diseases as a path to increase efficacy and reduce toxicities.

### **Laboratories:**

I am the Director of the following laboratories at UNC Eshelman School of Pharmacy (ESOP) and UNC Lineberger Comprehensive Cancer Center (LCCC):

#### **1) Director, UNC Advanced Translational Pharmacology and Analytical Chemistry (ATPAC) Lab and Recharge Center**

The UNC ATPAC Lab is a UNC Office of Sponsored Research approved recharge center that supports analytical chemistry and preclinical, translational, and clinical pharmacology studies with UNC and non-UNC investigators and institutions. The UNC ATPAC Lab consists of the following two labs with specific areas of research and support: 1) UNC Translational Oncology and Nanoparticle Drug Development Initiative (TOND<sub>2</sub>I) Lab; 2) Analytical Chemistry and Pharmacology Core (ACPC) Lab. The UNC ATPAC Lab supports research from my own lab, and highly collaborative and team science-based research with faculty members in the UNC ESOP, UNC LCCC, and CIN, as well as investigators from the National Institutes of Health, U.S. Food and Drug Administration, other academic research centers, and the pharmaceutical companies.

#### **2) Director, UNC Translational Oncology and Nanoparticle Drug Development Initiative (TOND<sub>2</sub>I) Lab in UNC ESOP and Carolina Institute of Nanomedicine (CIN)**

The UNC TOND<sub>2</sub>I Lab supports my personal academic research related to the translational development of anticancer agents with a focus on nanoparticle and carrier mediated agents and how these agents interact with the MPS. This lab also directly supports research Carolina Institute of Nanomedicine (CIN) and is a partner lab with the Nanomedicine Characterization Core Facility in the Center for Nanotechnology in Drug Delivery, UNC Eshelman School of Pharmacy, that is directed by Dr. Alexander Kabanov.

#### **3) Director, Analytical Chemistry and Pharmacology Core (ACPC) Lab in UNC LCCC**

This lab supports analytical chemistry, pharmacology and pharmacokinetic studies as related to preclinical and clinical drug development in the UNC LCCC.

As well as supporting my own research, the UNC ATPAC, UNC TOND<sub>2</sub>I Lab and ACPC have and will support and collaborate on analytical and pharmacology projects for preclinical and clinical studies from several research groups and centers at UNC. The source of funding and projects associated with these studies are from the NIH, foundations, UNC, the State of NC, and pharmaceutical companies. A summary of the UNC and non-UNC groups collaborating with the TOND<sub>2</sub>I Lab and UNC LCCC ACPC Lab are listed below:

- 1) UNC Eshelman School of Pharmacy (ESOP)
- 2) UNC ESOP Center for Integrative Chemical Biology and Drug Discovery (CICBDD)
- 3) UNC ESOP Center for Nanotechnology in Drug Delivery (CNBD)
- 4) UNC ESOP Institute for Pharmacogenomics and Individualized Therapy (IPIT)
- 5) UNC Carolina Center for Cancer Nanotechnology Excellence (CCNE)
- 6) UNC School of Medicine (SOM)
- 7) UNC Chemistry Department
- 8) UNC LCCC
  - a. Molecular Therapeutics
  - b. Cancer Cell Biology

- c. Clinical Research
  - d. Cancer Genetics
  - e. Mouse Phase I Unit (MP1U)
  - f. Developmental Therapeutics Program
  - g. Phase I Program
- 9) NIH
- a. NCI
  - b. NIAID
  - c. NINDS
- 10) U.S. FDA
- 11) Other academic universities and cancer centers
- 12) Pharmaceutical Companies

## **TEACHING ACTIVITIES**

### **Summary and Teaching Philosophy**

My teaching role in the UNC ESOP has been and is to teach via didactic lectures, student advising, mentoring PharmD students on research projects [as part of the Research and Scholarship in Pharmacy (RASP), UNC ESOP Honors Program, and research internships in the UNC TOND<sub>2</sub> Lab], and advise PhD students and fellows and post docs.

My philosophy for didactic and experiential teaching is to stimulate the minds of the students so that they can become independent and creative thinkers. I want the students to be able to make sound decisions and be creative in finding the answers to tough questions and situations, but more importantly also be able to ask the questions that are not being asked. I strongly feel that the most brilliant and successful people are not the people who find the answers but the people who find the next set of unanswered or unidentified questions. In order to do this a teacher must be able to stimulate and excite the students to be free thinkers.

Pharmaceutical sciences and the process of drug development is an ever-evolving area of research. Thus, pharmaceutical scientists need to have a wide range of knowledge but also have in depth knowledge of a specific area where they can become an expert. In order to educate and train the next generation of researchers a teacher must be able to communicate and facilitate a stimulating learning environment. I do this by not only lecturing to the students but also involving the students in the lecture via direct questions, problem solving paradigms, and real-life examples. In addition, I tie important information to clinical examples in an interactive exchange of information. For example, in my lecture on "Phases of Drug Development in Oncology" I highlight each important point with a discussion as if we (the class and I) were the directors of a pharmaceutical company and what decision(s) would we make based on available information presented in the lecture.

My teaching philosophy for student mentoring is to train PharmD and PhD students to become experts in the translational development of anticancer agents, nanoparticles, conjugates, and biologics. In addition, a goal is to develop the students as creative, independent and self-directed investigators. I try to achieve this goal by providing students the opportunity to experience the studies, infrastructure, and methodologies required for this type of research. This is accomplished by including PhD and PharmD students, fellows, RASP students, honors students, and research interns as active members of our research program in the Translational Oncology and Nanoparticle Drug Development Initiative (TOND<sub>2</sub>) Lab. The more the students are involved and take charge of a project the more they are excited and energized by research and drug development. This is also a method to identify and recruit the best and brightest UNC students to our research program. This also results in a pipeline of outstanding students into the PhD and fellowship programs in the UNC ESOP. This process is already starting to produce results as several of our honors students and research interns are evaluating research careers and PhD and fellowship programs at UNC and other outstanding research institutions.

**Accomplishments.** I have used my teaching philosophy in my lectures to the PharmD students, PhD students, fellows, post docs, other trainees, and other medical professionals at UNC and throughout the U.S. and the world. The effectiveness of my teaching methods is highlighted in the outstanding reviews I have received in the course and lecture evaluations. In addition, I have extensive experience in mentoring fellows, post docs, PhD students and PharmD students as research interns and honors students. The students and trainees I have mentored have been highly successful in their programs at UNC and after leaving UNC. In addition, I have taken an active and administrative role in the Young Innovator Program (YIP) in the UNC Eshelman Institute of Innovation (EII), Honors Program, and RASP Program. Details on these accomplishments are included in the Teaching Portfolio section.

### **Teaching Activities:**

**University of North Carolina School of Pharmacy:**

2008 to present

### **UNC Didactic Courses:**

#### **Course Coordinator:**

Co-Coordinator, Pharmacotherapy: Hematology and Oncology (PHCY 447)  
UNC Eshelman School of Pharmacy

2015

Coordinator, Pharmacotherapy: Hematology and Oncology (PHCY 447)

2015

## UNC Eshelman School of Pharmacy

Co-Course Coordinator, Graduate Course in Science and Methods in Drug Development (DPET 841), UNC Eshelman School of Pharmacy 2013-2018

Co-Course Coordinator, Advanced Hematology and Oncology (DPET 812) UNC Eshelman School of Pharmacy 2010-2012

### **Lectures - Current:**

Pharmacokinetics and Pharmacodynamics of Nanoparticle Agents 2009 - Present  
Nanomedicine Graduate Course (MOPH 738)  
UNC Eshelman School of Pharmacy, Chapel Hill, NC

### **Lectures - Past:**

Non-clinical Safety Assessment of Drugs, Graduate Course in Science and Methods in Drug Development (DPET 841), UNC Eshelman School of Pharmacy 2014 -2019

Oncologic Emergencies, Recitation Case Review, Hematology and Oncology (PHCY 447), UNC Eshelman School of Pharmacy 2014

Interspecies Scaling, Graduate Course in Pharmacokinetics (DPET 855) UNC Eshelman School of Pharmacy 2013 - 2019

Steps in the Preclinical and Clinical Development of Drugs 2013-2014  
UNC Eshelman School of Pharmacy Honors Program

Confirmatory Animal Pharmacology Studies, Graduate Course in Science and Methods in Drug Development (DPET 841), UNC Eshelman School of Pharmacy 2012 - 2019

Hematology and Oncology Recitation, Anemia Case 2011 - 2015  
Hematology and Oncology (PHCY 447), UNC Eshelman School of Pharmacy

Prostate Cancer, Pharmacotherapy: Hematology and Oncology (PHCY 447) 2011 - 2013  
UNC Eshelman School of Pharmacy

Hematology and Oncology Recitation, Breast Cancer Case 2011 - 2013  
Hematology and Oncology (PHCY 447), UNC Eshelman School of Pharmacy

Phases of Drug Development in Oncology, Advanced Hematology and Oncology (DPET 812), UNC Eshelman School of Pharmacy 2010 - 2017

Gynecologic Cancers, Pharmacotherapy: Hematology and Oncology (PHCY 447) 2010 - 2017  
UNC Eshelman School of Pharmacy

Translational Development of Anticancer Agents, Lunch and Learn Lecture Series in the UNC Graduate Training Program in Translational Medicine, UNC School of Medicine 2009 - 2010

### **UNC Training Courses**

#### **Lectures – Current:**

Conflict of Interest Issues and Case in Academia, UNC Eshelman School of Pharmacy 2021  
T32 Clinical Pharmacology Fellowship Program

Conflict of Interest Cases in Academic Research, UNC ESOP Graduate Education Retreat	2020 - Present
Bi-directional interaction between the innate immune system and complex drugs and biologics.	2020
UNC ESOP Innovations and Transformations in Pharmaceutical Sciences (ITPS) 2020	
Introduction to Clinical Pharmacology, NIH Principles of Clinical Pharmacology.	2019 - Present
Effect of MPS on Pharmacokinetics, Pharmacodynamics, and Tumor Delivery of Nanomedicines. Carolina Nanoformulations Workshop.	2018 - Present
Pharmacokinetics and Pharmacodynamics of Nanoparticles and Carrier-Mediated Agents in Preclinical Animal Models and in Patients, T32 Clinical Pharmacology Forum UNC Duke Collaborative Clinical Pharmacology Postdoctoral NIH T32 Training Program.	2015 - 2017

**Lectures – Past:**

Lead Roundtable Discussion on Networking Skills in Research. DPET Graduate Students.	2017
Preclinical Characterization of ADME, PK, PD and toxicology of Nanoformulations; Use of nano agents in non-cancer diseases. Carolina Nanoformulations Workshop.	2016 - 2017
Factors affecting nano delivery to tumors in animal models and patients Clinical PK and PD (efficacy and toxicity) aspects of nano agents. Carolina Nanoformulations Workshop, UNC Eshelman School of Pharmacy.	2016 - 2017
Course Coordinator and Developer, Steps and Methodology for the Translational Development of Nanoparticle Agents Carolina Center for Cancer Nanotechnology Excellence.	2011 - 2013

**UNC Doctoral Student Major Advisor or Committee Chair**

Gina Song, UNC Eshelman School of Pharmacy -Primary Advisor -Royster Society of Fellows Fellowship -Globalization of Pharmaceuticals Education Network (GPEN) 2012 Sponsored Graduate Student Dissertation entitled <u>“Immune Mechanisms Regulating Pharmacokinetics and Pharmacodynamics of PEGylated Liposomal Anticancer Agents”</u> .	2009 – 2014
Whitney Caron, UNC Eshelman School of Pharmacy - Primary Advisor - American Foundation for Pharmaceutical Education (AFPE) Pre-Doctoral Fellowship in Pharmaceutical Sciences 2011 - St. Jude National Graduate Student Symposium (NGSS) – 2013 Dissertation entitled <u>“The Mononuclear Phagocyte System as a Phenotypic Probe for Nanoparticle Pharmacokinetics and Pharmacodynamics in Preclinical and Clinical Systems”</u> .	2009 – 2013
Huali Wu, UNC Eshelman School of Pharmacy - Primary Advisor Dissertation entitled <u>“Clinical Pharmacokinetics and Pharmacodynamics of Anticancer Agents Delivered via PEGylated Liposomes”</u> .	2008 - 2010
Venita Gresham, UNC Eshelman School of Pharmacy - Committee Chair Dissertation entitled <u>“An Ex Vivo Familial Genetic Strategy For Determining Mechanism of Action”</u> .	2008 - 2010



### **UNC Thesis/Dissertation Committee Member**

Sean McCann, PhD Committee, UNC Eshelman School of Pharmacy	2021 - Present
Rachel Cooke, PhD Committee, UNC Chemistry Department	2021 - Present
Natasha Vinod, PhD Committee, UNC Eshelman School of Pharmacy	2018 - 2021
Christine Lee, PhD Committee, UNC Eshelman School of Pharmacy	2015 - 2020
Xiaomeng Wan, PhD Committee, UNC Eshelman School of Pharmacy	2015 - 2018
Nancy Gillis, PhD Committee, UNC Eshelman School of Pharmacy	2014 - 2017
Matthew Haynes, PhD Committee, UNC Eshelman School of Pharmacy	2014 -2017
Hao Cai, PhD Committee, UNC Eshelman School of Pharmacy	2014 - 2016
Katherine Moga, PhD Committee, UNC Eshelman School of Pharmacy	2014 - 2015
Tammy Shen, PhD Committee, UNC Eshelman School of Pharmacy	2012 - 2014
James Huckle, PhD Committee, UNC Eshelman School of Pharmacy	2012 - 2014
Kevin Chu, PhD Committee, UNC Eshelman School of Pharmacy	2012 - 2013
Jessica Sorrentino, PhD Committee, UNC Pharmacology Department	2011 - 2013
Yong Zhang, PhD Committee, UNC Eshelman School of Pharmacy	2011 - 2013
Kai Chen, PhD Committee, UNC Chemistry Department	2011 - 2012
Dongyun Liu, PhD Committee, UNC Eshelman School of Pharmacy	2010-2013
Timothy Merkel, PhD Committee, UNC Chemistry Department	2010-2011
Lamar Mair, PhD Committee, UNC Applied Sciences and Engineering	2008 - 2012
Wesley Sivak, PhD Committee, University of Pittsburgh	2004 - 2007
Khalid Alkharfy, PhD Committee, University of Pittsburgh	2000 – 2002

### **UNC Fellowship Director and Advisor**

Fellowship Program in Drug Development and Hematology and Oncology UNC Eshelman School of Pharmacy, University of North Carolina	2008 - Present
Jacob Ramsey, F99/K00 Fellow, Co-sponsor	2021 - Present
Amber Moody, CCCNE Nano T32 Fellow	2019 - Present
Lauren Price, Hematology-Oncology Research Fellow, UNC Eshelman School of Pharmacy	2016 - 2018
Andrew Lucas, Hematology-Oncology Research Fellow, UNC Eshelman School of Pharmacy	2017 - 2017
Andrew Madden, Hematology-Oncology Research Fellow, UNC Eshelman School of Pharmacy	2012 - 2015
Linsey Phillips, UNC SPIRE Postdoc Program funded by NIGMS	2011 -2014
Summit Rawal, Hematology-Oncology Research Fellow, UNC Eshelman School of Pharmacy	2011 - 2012
Parag Kumar, Drug Development Fellow UNC Eshelman School of Pharmacy	2011 - 2012
Jeff Huang, Drug Development Fellow UNC Eshelman School of Pharmacy	2010-2011
Mark Walsh, Hematology-Oncology Research Fellow, UNC Eshelman School of Pharmacy 2011 ASCO Oncology Trainee Award for study entitled “Technetium-99m sulfur colloid (TSC) as a phenotypic probe for the pharmacokinetics (PK) and pharmacodynamics (PD) of PEGylated liposomal doxorubicin (PLD) in patients (pts) with recurrent epithelial ovarian cancer (EOC)”	2009 - 2011
Austin Combest, Drug Dev. Fellow UNC Eshelman School of Pharmacy - 2010 AACR Sanofi-Aventis Scholar-in-Training Award for study entitled “Plasma and Tumor Pharmacokinetics (PK) of Carboplatin in Genetically Engineered Mouse Models of Melanoma (GEMMs), Murine Melanoma, and in Patients with Cutaneous Melanoma” - 2010 ASCO Cancer Foundation Merit Award for study entitled “Pharmacokinetics (PK) of oxaliplatin (OX) after Intravenous (IV)	2009 – 2010

and intraperitoneal (IP) administration in patients with gynecological malignancies Irene La, Hematology-Oncology Research Fellow, UNC Eshelman School of Pharmacy - 2009 Rho Chi Clinical Research Scholarship Awardee	2008 - 2010
Angela Yu, Drug Dev. Fellow, UNC Eshelman School of Pharmacy	2008 - 2009

**UNC School of Medicine Graduate Training Program in Translational Medicine  
Clinical Mentor**

Rachel Cooke Translational Development of Decodable Polymer Libraries for Protein Stabilization (PI: Abigail Knight, PhD)	2020 - Present
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**UNC ESOP RASP Students**

**RASP Faculty Mentor**

Reanna Jereb Crowded Bus Theory: PK Modeling of the Linear and Non-Linear Delivery of Nanoparticles in Preclinical Models of Solid Tumors	2021 - Present
Sydney Stocks Evaluation of the Effects of Body Habitus and Race on Immuno-Oncology Antibodies	2020 – Present
William Bailey Burks Evaluation of the Effects of Body Habitus and Race on Pembrolizumab Response and Toxicity	2019 – 2020
Zachary Whitehead Effects of Obesity on the Efficacy of PEGylated Liposomal Doxorubicin in Patients with Platinum Refractory Ovarian Cancer (Submitted to Honors Carolina, March 2021)	2018 - 2021

**RASP Division Director**

Melissa Maas	2022 - Present
Philip Quyang	2022 - Present
Ashley Gleaton	2020 - Present
Brian Lam	2020 - Present
Kelsey Chaykowski	2020 - Present
Melanie Mills	2020 - Present
J Bernard Collins	2019 - 2021
Monica Conzad	2019 - 2021
Taek Lee	2019 - 2021
Marissa Ross	2018 - 2020
Sarah Mills	2018 - 2020

**UNC ESOP Research Honor Students or Independent Study Students**

Esha Thakkar, Independent Study Student, UNC Eshelman School of Pharmacy Project entitled “Effect of Body Habitus on Bevacizumab Pharmacokinetics in Adult and Pediatric Patients with Refractory Solid Tumors”	2021 - Present
Rachel Tyson, Research Honors Student, UNC School of Pharmacy Honors project entitled “Preclinical Development of Nanogel	2014 - 2018

Formulations of Cisplatin”	
Jeffery Roth, Research Honors Student, UNC School of Pharmacy Honors project entitled “Quantitation, Localization and Pharmacokinetics of Erlotinib Small Molecule and Nanoformulations in a GBM Mouse Model”	2014 - 2018
Leah Herity, Research Honors Student, UNC School of Pharmacy Honors project entitled “A High Throughput Screening Platform to Evaluate the Interactions between Nanoparticle and Non-Nanoparticle Agents and the Mononuclear Phagocyte System (MPS) in Humans and Animal Models”	2013 - 2017
Brittney Roberts, Research Honors Student, UNC School of Pharmacy Honors project entitled “Evaluation of Mediators of Mononuclear Phagocyte System (MPS) Function and Nanoparticle Pharmacology in Obese and Non-Obese Patients with Ovarian and Endometrial Cancer enrolled on the UNC Cancer Survivorship Cohort (CSC)”	2013 - 2017
William McAdoo, Research Honors Students, UNC School of Pharmacy Honors project entitled “Modifying mononuclear phagocyte system in tumor to enhance the delivery of nanoparticle agents”	2012 - 2014
Amanda Keeler, Research Honors Student, UNC School of Pharmacy Honors project entitled “Pharmacokinetic, biomarker and pharmacodynamic studies of nanoparticle formulations of platinum analogues in the treatment of solid tumors and brain tumors”	2011 - 2014
Taylor White, Research Honors Student, UNC School of Pharmacy Honors project entitled “Profiling mononuclear phagocyte system in tumors: effects on clearance and tumor delivery of nanoparticle agents”	2011 - 2014
Andrew Lucas, Research Honors Student, UNC School of Pharmacy Honors project entitled “Sample processing and analytical methods to measure doxorubicin binding to DNA in biological samples”	2010 - 2014
Shane Moore, Research Honors Student, UNC School of Pharmacy Honors project entitled “Profiling the mononuclear phagocyte system (MPS) in solid tumors and the effects on nanoparticle tumor delivery”	2010 - 2013
Anthony Chhay, Research Honors Student, UNC School of Pharmacy Honors project entitled “Development of methods to count the number of nanoparticles in a dose and how this affects the PK and PD of the nanoparticle”	2010 - 2012
Ryan Schell, Research Honors Student, UNC School of Pharmacy Honors project entitled “Evaluation of inter-patient pharmacokinetic variability of liposomal and non-liposomal anticancer agents”	2010 - 2012
Hugh Giovinazzo, Research Honors Student, UNC School of Pharmacy Honors project entitled “Technetium-99m sulfur colloid as a phenotypic probe for the pharmacokinetics and pharmacodynamics of PEGylated liposomal doxorubicin (PLD)”	2010 - 2012
Katie Parise, Research Honors Student, UNC School of Pharmacy Honors project entitled “Comparison of toxicity and study design issues of nanoparticle and small molecule anticancer agents in preclinical models and phase I clinical trials.”	2009 - 2011
Lakia Scoggins, Research Honors Student, UNC School of Pharmacy Honors project entitled “Evaluating the effects of bortezomib n the pharmacokinetics (PK) of pegylated liposomal doxorubicin”	2008 - 2010

### **UNC ESOP Research Interns**

Mallory Storrie, UNC	2019 - Present
Esha Thakkar, UNC Eshelman School of Pharmacy	2019 - Present

Aaron Hamm, UNC	2019 - Present
Taek Lee, UNC Eshelman School of Pharmacy	2018 - 2020
Natalie Huggins, UNC	2018 - 2019
Qiongqiong Mei, UNC Eshelman School of Pharmacy	2018 - 2019
Jisun Ban, UNC Eshelman School of Pharmacy	2017 - Present
Emili Brooks Anderson, UNC	2017 - 2020
Jesse Lewandowski, UNC Eshelman School of Pharmacy	2017 - 2018
Juan Razo, UNC Eshelman School of Pharmacy	2016 - 2020
Savannah Megeau, UNC Eshelman School of Pharmacy	2016 - 2019
Joseph Piscitelli, UNC and UNC Eshelman School of Pharmacy	2015 - 2020
Amy Lin, UNC Eshelman School of Pharmacy	2015 - 2018
Leah Osaе, UNC Eshelman School of Pharmacy	2015 - 2017
Zachary Kornblum, UNC Eshelman School of Pharmacy	2014 - 2017
Sarah Montgomery, Northwood High School	2014 - 2017
Fatimah Bori, UNC- North Carolina Central University Partners in Basic Cancer Research Intern Program	2013
Bernard Roles, Research Intern, NC State University	2013 - 2014
Candice Sherwood, Research Intern, UNC School of Pharmacy	2012 - 2014
Jennifer Coleman, Research Intern, UNC School of Pharmacy	2011 - 2013
Benjamin Guiastrennec, Res Intern, University of Montpellier, France Honors project entitled "Study of the Relationship between MPS Activity and the PK Disposition of Nanoparticle Formulations of Cisplatin in Tumors"	2011
Brian Sidone, Res Intern, Duquesne University School of Pharmacy, Pittsburgh	2011
Lavanya Rao, Research Intern, NC State University	2011
Elaine Yee-Ling, Research Intern, UNC School of Pharmacy	2010 - 2011
Whitney Davis, Research Intern, UNC School of Pharmacy	2010- 2011
Katie Sandison, Research Intern, UNC School of Pharmacy	2009 - 2012
Ming Wu, Research Intern, UNC School of Pharmacy	2009 - 2010
Hiep C. Tu, Research Intern, UNC School of Pharmacy	2009 - 2010
Jeremy Sen, Research Intern, UNC School of Pharmacy	2009 - 2010
Vinh Hoang, Research Intern, UNC School of Pharmacy	2008 - 2011
Maureen Bottino, Research Intern, UNC School of Pharmacy	2008 - 2009
Elizabeth Neuffer, Research Intern, UNC School of Pharmacy	2008 - 2009
Xuefang Bai, Research Intern, UNC School of Pharmacy	2008 - 2009

### **UNC Eshelman Institute of Innovation Young Innovators Program (YIP)**

#### **Co-Faculty Director and Preceptor**

2015 - 2018

#### YIP Students:

Jennifer Spores, Chapel Hill High School	2019
Alex Bean, Northwood High School	2019
Sara Eve, Northwood High School	2018
Megan Kanaby, Cardinal Gibbons High School	2018
Mallory Storrie, Northwood High School	2017
Hunter Hughes, Northwood High School	2017

Salem Williams, Northwood High School	2016
<b><u>UNIVERSITY OF PITTSBURGH SCHOOL OF PHARMACY:</u></b>	1999 – 2008
<b><u>Didactic Courses:</u></b>	
Drug Development of Anticancer Agents, Elective Independent Study for P3 Students, School of Pharmacy, University of Pittsburgh	2004 - 2008
Phase I and Phase II Study Designs in Oncology Clinical Scientist-Ph.D. Program: School of Pharmacy University of Pittsburgh, Pittsburgh, PA.	2001 - 2008
Co-Course Coordinator, Principles of Clinical Pharmacology Presented by National Institutes of Health University of Pittsburgh, Pittsburgh, PA.	2000 - 2001
Pharmacokinetics of Anticancer Agents, Pharmacotherapy: Oncology and Hematology (Pharm 5315) School of Pharmacy, University of Pittsburgh, Pittsburgh, PA.	1999 - 2008
Drug Development in Oncology, Pharmacotherapy: Oncology and Hematology (Pharm 5315) School of Pharmacy, University of Pittsburgh, Pittsburgh, PA.	1999 - 2008
Ovarian Cancer, Pharmacotherapy: Oncology and Hematology (Pharm 5315) School of Pharmacy, University of Pittsburgh, Pittsburgh, PA.	1999 - 2002
Comprehensive Chemotherapy Course: Plant Alkaloids: Taxanes, Vinca Alkaloids, and Epipodophyllotoxins University of Pittsburgh Cancer Institute, Pittsburgh, PA.	1999 - 2002
<b><u>Training Program</u></b>	
Co-Director of the Fellowship Program in Drug Development of Anticancer Agents in Program of Molecular Therapeutics/ Drug Discovery at University of Pittsburgh Cancer Institute.	2000 - 2008
<b><u>Fellowship Advisor</u></b>	
Laura Jung, Hematology-Oncology Research Fellow University of Pittsburgh Cancer Institute	2000 - 2003
<b><u>DUQUESNE UNIVERSITY</u></b>	
<b><u>Lectures:</u></b>	
Co-Course Coordinator, Pharmacotherapy: Hematology/Oncology Duquesne University School of Pharmacy.	2006 - 2008
<b><u>UNIVERSITY OF MARYLAND</u></b>	
<b><u>Lectures:</u></b>	
Clinical Pharmacokinetics of Chemotherapeutic Agents, Clinical Pharmacokinetics (PHMY-562), University of Maryland School of Pharmacy, Baltimore, MD.	1998 - 1999

## **Training Programs:**

Co – Director Program in Oncology Pharmacy Research, 1998 - 1999  
Greenebaum Cancer Center and School of Pharmacy

## **UNIVERSITY OF TENNESSEE**

### **Lectures:**

Pharmacotherapeutics of Cancer Therapy 1996 - 1997  
Department of Clinical Pharmacy  
University of Tennessee College of Pharmacy, Memphis, TN.

## **PROFESSIONAL SERVICE**

### **Current:**

American Society of Clinical Oncology Annual Meeting 2020 - Present  
Development Therapeutics & Cytotoxic Chemotherapy Committee  
American College of Clinical Pharmacy, Full Member 2001 - Present  
American Association of Cancer Research, Active Member 1997 - Present  
American Society of Clinical Oncology, Active Member 1997 - Present

### **Past:**

NCI SBIR Special Emphasis Panel on Development of Cancer 2011 - 2017  
Therapeutics, Imaging Technologies, Interventional Devices,  
Diagnostics and Prognostics Toward Commercialization (R44)  
NC Center of Innovation for Nanobiotechnology (COIN), Scientific Advisory Board 2010 - 2015  
Drug Information Association Regulatory Affairs: The IND Phase 2009  
University of Pittsburgh Alumni Association Board of Directors, 2009 - 2011  
Senior Advisor  
American Society of Clinical Oncology 2006 Annual Meeting, 2006  
Development Therapeutics & Cytotoxic Chemotherapy,  
Co-Chair of Oral Discussion Session  
Eastern Cooperative Oncology Group, Developmental Therapeutics Committee, Member 2005 - 2010  
Gynecologic Oncology Group, Phase I and Pharmacology Committees, Member 2005 - 2010  
American Society of Clinical Oncology 2005 Annual Meeting, 2005  
Development Therapeutics & Cytotoxic Chemotherapy,  
Co-Chair of Poster Discussion Section  
American Society of Clinical Oncology, Development Therapeutics & Cytotoxic 2004 - 2010  
Chemotherapy, Member  
Pennsylvania Cancer Control Consortium, Research Committee 2004 - 2007  
University of Pittsburgh Alumni Association Board of Directors, 2003 - 2008  
Director-At-Large & Nominations Committee  
University of Pittsburgh Board of Trustees, Athletics Committee, Faculty Representative 2003 - 2008  
University of Pittsburgh Athletics Compliance Committee 2001 - 2008  
University of Pittsburgh Athletics Advisory Committee on Admission of Student Athletes 2001 - 2008  
University of Pittsburgh Alumni Association, Regional Director 2001 - 2003  
University of Pittsburgh Senate Athletics Committee, Co-Chair 2000 - 2008

University of Pittsburgh Alumni Association, Board of Directors	1997 - 2008
University of Pittsburgh Alumni Association, Pitt Club Representative	1997 - 2001
University of Pittsburgh Memphis Area Pitt Organization, Alumni Leader	1995 - 1997
American College of Clinical Pharmacy, Associate Member	1994 - 2001
University of Pittsburgh School of Pharmacy Alumni Association	1994 - 1998
American Society of Health-Related Pharmacy	1993 - 1995
Rho Chi Pharmacy Honor Society, Secretary-Treasurer	1991 - 1992
Phi Delta Chi Fraternity	1989 - 1992

## **NIH STUDY SECTION PARTICIPATION**

### **Past:**

NCI SBIR Special Emphasis Panel on Development of Cancer Therapeutics, Imaging Technologies, Interventional Devices, Diagnostics and Prognostics Toward Commercialization (R44)	2010 - 2017
National Cancer Institute Nanotech Study Section	2009 - 2011
National Cancer Institute Development Therapeutics Study Section	2008 - 2009

## **ADVISORY COMMITTEE APPOINTMENTS**

### **Current:**

Member, Pharmaceutical Science and Clinical Pharmacology Advisory Committee of the US Food and Drug Administration, Silver Spring, MD	2022 - Present
Member, Champions Advisory Board, University of Pittsburgh Department of Athletics	2021 - Present

### **Past:**

Advisor, Cancer Nanotechnology Challenge	2015 - 2019
The Center for Advancing Innovation and Translation of Nanotechnology in Cancer (TONIC) Consortium	
Advisor, Neuro Startup Challenge, The Center for Advancing Innovation NanoEngineering for Medicine and Biology (NEMB)	2014 - 2017
Workshop on Challenges for Engineers in Biomedical and Clinical Sciences	2012
NCI Alliance for Nanotechnology in Cancer: Animal Models Working Group, Co-Chair	2012 -2020
NCI Alliance for Nanotechnology in Cancer Nanomedicine Drug Delivery Clinical Trial Working Group (NDD CTWR)	2012 - 2017
Pharmacologic and Regulatory Issues for the Translational Development of Nanoparticle Agents Workshop, Controlled Release Society Meeting 2011, Co-Chair	2011
Nanomedicine Product Development Summit: Turning Nanoparticle Delivery Systems into Innovative Medicines. Controlled Release Society Meeting 2011	2011
Controlled Release Society Educational Workshop entitled "Nanoparticle and Liposomal Regulatory and Pharmacology Issues", Co-Chair	2011
NCI Alliance for Nanotechnology in Cancer: Pharmacology and Biodistribution Working Group	2011 - 2020
NC Biomedical Innovation Network Symposium on Cutting-Edge Approaches to Drug and Device Development 2010, Co-Chair	2010
NC Center of Innovation for Nanobiotechnology (COIN) Scientific Advisory Board	2010 - 2013

Environmentally Responsible Development of Nanotechnology NC Summit	2009
NCI Best Practices in Cancer Nanotechnology Workshop	2009
NCI Alliance for Nanotechnology in Cancer, Pharmacology Committee	2009
Yakult Pharmaceutical Advisory Board	2008 - 2012
Neopharm, Inc., Liposomal Advisory Board	2006 - 2007
University Pharmacotherapy Associates	2004 - 2008
ALZA Inc., Oral Delivery Advisory Board	2002 - 2008
ALZA Inc., CDK602 Advisory Board	2002 - 2008
Amgen Inc., Oncology Advisory Board	2001 - 2005
Supergen Advisory Board	1998 - 2006
Optimized Analysis in Kinetics Consulting	1998 - 2000
SmithKline Beecham Regional Oncology Advisory Board	1998 - 1999

## **COMMITTEES**

### **PROFESSIONAL ORGANIZATIONS (Including offices held)**

#### **Current:**

ASCO Education Committee for Developmental Therapeutics and Tumor Biology	2019 - Present
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#### **Past:**

12 <sup>th</sup> International Symposium on Polymer Therapeutics: From Laboratory to Clinical Practice, Scientific Advisory Board	2018
American Association for Cancer Research Annual Meeting Program Committee	2014
Carolina Institute for NanoMedicine and Joint UNC-NC State BioMedical Engineering Dept. Conference, Core Development/Training Panel, Co-Chair	2012
Pharmacologic and Regulatory Issues for the Translational Development of Nanoparticle Agents Workshop	2011
Controlled Release Society Meeting, Co-Chair	
Symposium on Nanotechnology in Products: Pitfalls and Successes in the Path to a Commercial Product at the MANCEF/COMS Nanotechnology Meeting 2011, Greensboro, NC.	2011
Hematology Oncology Pharmacist Association, Research Committee	2010-2011
Southeastern Phase 2 Consortium (SEP2C), Pharmacology Committee	2009 - 2014
American Society of Clinical Oncology 2006 Annual Meeting, Development Therapeutics & Cytotoxic Chemotherapy, Co-Chair of Oral Discussion Session	2006
Eastern Cooperative Oncology Group, Developmental Therapeutics Committee, Member	2005 - 2017
Gynecologic Oncology Group, Phase I and Pharmacology Committees, Member	2005 - 2017
American Society of Clinical Oncology 2005 Annual Meeting, Development Therapeutics & Cytotoxic Chemotherapy, Co-Chair of Poster Discussion Section	2005
Pennsylvania Cancer Control Consortium, Research Committee	2004 - 2008
University of Pittsburgh Alumni Association	1992 - 2005
Rho Chi Pharmacy Honor Society, Secretary-Treasurer	1991 - 1992
Phi Delta Chi Professional Fraternity, Alumni Officer	1989 - 1992

## **UNIVERSITY AND SCHOOL**



## **University of North Carolina:**

### **Current:**

UNC Eshelman School of Pharmacy MMI PharmD Student Interview Committee	2022 - Present
J Heyward Hall Award Committee	2022 - Present
UNC Eshelman School of Pharmacy Campbell Mentoring Program	2020 - Present
UNC Technology-enable Clinical Services (TeCS) Company Commercialization Plan Committee	2020 - Present
UNC University Conflicts of Interest Advisory Committee	2020 - Present
UNC Eshelman School of Pharmacy Research & Graduate Education Retreat Committee	2020
UNC Eshelman School of Pharmacy, Conflict of Interest Committee, Co-Chair	2019 - Present
UNC Eshelman School of Pharmacy RASP Committee	2018 - Present
NC TraCS Liaison from UNC Eshelman School of Pharmacy	2017 - Present
Committee on Conflict of Interest, UNC Eshelman School of Pharmacy, University of North Carolina.	2008 - Present

### **Past:**

UNC Eshelman School of Pharmacy Accreditation Self-Study Committee: Standard 21 Sub-Committee	2018 - 2020
UNC Faculty Council, Tenured Representative for UNC Eshelman School of Pharmacy	2017 - 2019
UNC CFE Leadership Advanced Program	2017 - 2018
Eshelman Institute of Innovation (Eii), Review Committee for Student and Trainee Grant Proposals	2016 – 2017
Faculty Advisor for Dr. Eric Bachelder's KL2 Application	2015 - 2017
Carolina Nanoformulations Workshop, UNC Eshelman School of Pharmacy.	2015
UNC Eshelman School of Pharmacy, Faculty Search Committee for Clinical Scientist, Chair.	2014 - 2015
UNC Eshelman School of Pharmacy Curriculum Design and Execution Committee on Inquiry, Innovation and Problem Solving	2013 - 2017
UNC Eshelman School of Pharmacy Educational Renaissance – Scholarship Committee	2012 - 2013
UNC Eshelman School of Pharmacy ACPE Self-Study Committee on Administrative Relationships	2010
UNC LCCC Animal Studies Core Advisory Committee	2010 - 2019
UNC Eshelman School of Pharmacy Honors Program Committee	2010 - 2018
UNC Eshelman School of Pharmacy, DPET, PhD Qualifying Exam Committee	2010 - 2014
Faculty Advisor for Dr. Carey Anders' K23 Grant	2010 - 2014
Tgen / TD2 Drug Development Round Table	2009 - 2010
UNC Lineberger Comprehensive Cancer Center, Developmental Therapeutics Program, Clinical Pharmacology Co-Chair	2008 - 2020
UNC Lineberger Comprehensive Cancer Center, Mouse Phase I Unit Program, Co-Director	2008 - 2015
Committee on the Design and Implementation of the Phase I Unit of the UNC Lineberger Comprehensive Cancer Center in NCCH	2008 - 2009

## **University of Pittsburgh:**

Protocol Review Committee, University of Pittsburgh Cancer Institute	2006 - 2008
University of Pittsburgh School of Pharmacy Admissions Committee	2006
University of Pittsburgh Alumni Association Board of Directors, Director at Large	2003 - 2008
University of Pittsburgh Board of Trustees, Athletic Committee	2003 - 2008

University of Pittsburgh Athletic Department Committee for NCAA Interim Report on Academic Integrity	2002
Pitt's Generation Next of the Metro Pitt Club, Chair	2002 - 2006
University of Pittsburgh Advisory Committee for the Admission of Student Athletes	2001 - 2008
University of Pittsburgh Alumni Association Board of Directors, Regional Director	2001 - 2003
University of Pittsburgh Faculty Senate	2000 – 2008
Senate Athletics Committee, Co-Chair	
University of Pittsburgh Alumni Association Board of Directors, Scholarship Committee Chair	1997 – 2017
University of Pittsburgh Alumni Association Board of Directors, Pitt Club Representative	2001 - Present
	1997 – 2001

## **CONSULTANT**

### **Current:**

Adaptimmune Therapeutics	2021 - Present
Inimmune	2021 - Present
Akagera Medicines	2020 - Present
GlaxoSmithKline	2020 - Present
Eagle Pharmaceuticals	2020 - Present
Syros Pharmaceuticals	2017 - Present
Glytatics, LLC, Co-Founder and CSO	2016 - Present
ChemoGLO, LLC, Co-Founder and CSO	2012 - Present
MediGLO Pharmaceutical Consulting, LLC, Founder and CEO	2002 - Present

### **Past:**

Ellipses Pharma	2020
OBI Pharmaceuticals	2018 - 2020
BlueLink Pharmaceuticals	2017 - 2020
Cerulean Pharma	2016 - 2017
NuVue	2016 - 2017
Cristal Therapeutics, Scientific Advisory Board	2015 - 2016
Mallinckrodt Pharmaceuticals, Scientific Advisory Board	2015 - 2015
Wildcat-Nanoglo, LLC, Co-Founder; Chair of Scientific Advisory Board	2014 - 2015
Merrimack Pharmaceuticals	2013 - 2019
Nanovector, Scientific Advisory Board	2012 - 2016
Onyx Pharmaceuticals	2012 - 2015
Nektar Therapeutics	2012 - 2013
AZAYA Therapeutics	2011 - 2012
Covidien-Mallinckrodt	2010 - 2013
Terumo Corporation	2010 - 2012
Endece	2010 - 2011
Aura Biosciences	2010 - 2011
Guide Point Global Consulting	2009 - 2012
Liquidia	2009 - 2010

Yakult Pharmaceuticals	2008 - 2010
Genentech	2008 - 2009
Enzon Pharmaceuticals	2008 - 2009
Labopharm	2008 - 2009
Hana Biosciences	2007 - 2009
Clinical Advisors, Network of Advisors Consulting	2006 - 2009
MEDACorp, Medical Consulting	2006 - 2009
Neopharm, Inc.	2006 - 2007
Alza Corp.	2002 - 2008
Amgen Inc. Oncology Advisory Board	2001 - 2005
Supergen Advisory Board	2000 - 2008
SmithKline Beecham Regional Oncology Advisory Board	1998 - 1999
Optimized Analysis in Kinetics Consulting	1998 - 1999

## **REVIEWER**

### **Journal Reviewer**

Reviewer, PNAS	2015 - Present
Reviewer, Journal of Oncology Pharmacy Practice	2014 - Present
Reviewer, Advanced Drug Delivery Reviews	2012 - Present
Reviewer, International Journal of Pharmaceutics	2012 - Present
Reviewer, Journal of Liposomal Research	2009 - Present
Reviewer, Journal of Pharmacology and Experimental Therapeutics	1999 - Present
Reviewer, Journal of Clinical Oncology	1999 - Present
Reviewer, Clinical Cancer Research	1998 - Present
Reviewer, Cancer Chemotherapy and Pharmacology	1996 - Present

### **Editorial Advisory Board**

Editorial Board Member, Drugs of the Future	2009 - Present
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### **Other**

Medical Writer for Oncology, Medscape, Inc.	1999 - 2001
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