

## John C. Carmen III

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### Education

**Brigham Young University**, Provo, UT

Master of Science, Microbiology

An Investigation of the Mechanism of the Action of Ultrasound and Antibiotics on *Escherichia coli*,  
*Pseudomonas aeruginosa*, and *Staphylococcus epidermidis*

December 2001

**Brigham Young University**, Provo, UT

Bachelor of Arts in English

Secondary Major: Zoology

August 1999

### Experience

- Aug 2002-present** **Doctoral Candidate**, University of Kentucky College of Medicine, Integrated Biomedical Sciences Program, Dept. Microbiol., Immunol., Mol. Gen., Sinai Laboratory
- Sept 2001-Jul 2002** **Associate Research Assistant/Lab Manager**, Department of Microbiology, Brigham Young University, Provo, Utah
- Aug 1999-Dec 2001** **Graduate Research Assistant**, Department of Microbiology, Brigham Young University, Provo, Utah

### Teaching Experience

- Sept-Oct. 2003** **Teaching Assistant**, Immunity and Infectious Disease lab, University of Kentucky, College of Medicine, Lexington, Kentucky
- July 2005** **Teaching Assistant**, Biology of Parasitism, Module 4, MBL, Woods Hole, MA

### Publications

Huber, B.S., D.V. Allred, **J.C. Carmen**, D.D. Frame, D.G. Whiting, J.R. Cryan, T.R. Olson, P.J. Jackson, K. Hill, M.T. Laker, and R.A. Robison. 2002. Random amplified polymorphic DNA and amplified fragment length polymorphism analyses of *Pasteurella multocida* isolates from fatal fowl cholera infections. *J. Clin. Microbiol.* 40: 2163:2168.

Nelson, J.N., B.L. Roeder, **J.C. Carmen**, F. Roloff, and W.G. Pitt. 2002. Ultrasonically activated chemotherapeutic drug delivery in a rat model. *Cancer Research.* 62: 7280-7283.

Sinai, A.P., T.M. Payne, **J.C. Carmen**, L. Hardi, S.J. Watson, and R.E. Molestina. 2004 Mechanisms underlying the manipulation of host apoptotic pathways by *Toxoplasma gondii*. *Int. J. Parasit.* 34: 381-391.

**Carmen, J.C.**, B.L. Roeder, J.L. Nelson, B.L. Beckstead, C.M. Runyan, G.B. Schaalje, R.A. Robison, and W.G. Pitt. 2004. Ultrasonically enhanced vancomycin activity against *Staphylococcus epidermidis* biofilms *in vivo*. *J. Biomater. Appl.* 18: 237-245.

**Carmen, J.C.**, J.L. Nelson, B.L. Beckstead, C.M. Runyan, R.A. Robison, G.B. Schaalje, and W.G. Pitt. 2004. Ultrasonic-enhanced gentamicin transport through colony biofilms of *Pseudomonas aeruginosa*. *J. Infection Chemother.* **10**: 193-199.

**Carmen, J.C.**, B.L. Roeder, J.L. Nelson, R.L. Robison, R.A. Robison, G.B. Schaalje, and W.G. Pitt. 2005. Treatment of biofilm infections on implants with low-frequency ultrasound and antibiotics. *Am. J. Infect. Control.* **33**: 78-82.

**Carmen, J.C.**, L. Hardi, R.E. Molestina, and A.P. Sinai. (2006) *Toxoplasma gondii* inhibits ultraviolet light-induced apoptosis through multiple interactions with the mitochondrion-dependent programmed cell death pathway. *Cell. Microbiol.* **8**: 301-15.

Petersen, C.A., K.A. Krumholz, **J. Carmen**, A.P. Sinai, and B.A. Burleigh. (2006) *Trypanosoma cruzi* infection and nuclear factor kappa B activation prevent apoptosis in cardiac cells. *Infect. Immun.* **74**: 1580.

Runyan, C.M., **J.C. Carmen**, B.L. Beckstead, J.L. Nelson, R.A. Robison, and W.G. Pitt. (2006) Low-frequency ultrasound increases outer membrane permeability of *Pseudomonas aeruginosa*. *J. Gen. Appl. Microbiol.* **52**. (in press)

**Carmen, J.C.** and A.P. Sinai. (2006) Suicide Prevention: Disruption of apoptotic pathways by protozoan parasites. *Molec. Microbiol.* (manuscript submitted).

## **Presentations**

**Carmen, J.C.**\* "Forty-eight hour Bioacoustic Therapy in a Rabbit Model", American Society for Microbiology Intermountain Branch Annual Meeting, Provo, UT, April 22, 2000. (Talk)

**Carmen, J.C.**\* , B.L. Roeder, J.L. Nelson, R.L. Robison, G.B. Schaalje, R.A. Robison, and W.G. Pitt. Extending Bioacoustic Therapy: Forty-eight Hour Treatment in an *In Vivo* Model, ASM Conference on Biofilms 2000, Big Sky, MT, July 16-20, 2000. (Talk)

**Carmen, J.C.**\* , C.M. Runyan, B.L. Beckstead, J.T. Nelson, R.A. Robison, and W.G. Pitt. "Ultrasonic Enhancement of Gentamicin Diffusion", American Society for Microbiology Intermountain Branch Annual Conference, Pocatello, ID, April 28, 2001. (Talk)

**Carmen, J.C.**\* , B.L. Beckstead, C.M. Runyan, J.L. Nelson, G.B. Schaalje, R.A. Robison, W.G. Pitt. Ultrasonic enhanced gentamicin transport through colony biofilms of *Escherichia coli* and *Pseudomonas aeruginosa*. American Society for Microbiology 102<sup>nd</sup> General Meeting, Salt Lake City, UT, May 19-23, 2002. (Poster)

Pitt, W.G.\* , B. L. Roeder, **J. C. Carmen**, and J. Nelson. "Application of Ultrasound to Treat Biofilm Infections on Implants", Medical Biofilms 2002, Tokyo, Japan, March 17-19, 2002. (Talk)

Pitt, W.G.\* , **J.C. Carmen**, B.L. Roeder, J.L. Nelson, B.L. Beckstead, C.M. Runyan. "Ultrasound Enhances Vancomycin Activity Against *S. epidermidis* Biofilm Infections In Vivo," *Trans. Soc. For Biomaterials*, Reno, NV, April 30-May 3, 2003.

Payne, T.M., L. Hardi, **J. Carmen**, R.E. Molestina, T. Sinai\* . "Manipulation of the Machinery of Apoptosis in *Toxoplasma gondii* Infected Cells", Seventh International Congress on Toxoplasmosis, Tarrytown, New York, May 23-27, 2003.

**Carmen J.C.**\* , L. Hardi, R.E. Molestina, A.P. Sinai. *Toxoplasma gondii* manipulates the mitochondrial arm of the apoptotic cascade. *Molecular Parasitology Meeting XIV*. Woods Hole, MA, September 14-18, 2003. (Talk)

Nelson, J.L.\* , B.L. Roeder, **J.C. Carmen**, F. Roloff, W.G. Pitt. Ultrasonically activated chemotherapeutic drug delivery in a rat model. *AAPS Annual Meeting*, Salt Lake City, UT, October 26-30, 2003. (Poster)

**Carmen, J.C.**\*, L. Hardi, R.E. Molestina, A.P. Sinai. *Toxoplasma gondii* inhibits cytochrome c release by manipulating expression of the BCL-2 family members: potential effects on host cell energetics. Keystone Symposium: Apoptosis in Biochemistry and Structural Biology, Keystone, CO, February 3-8, 2004. (Poster)

Sinai, A.P.\* , R.E. Molestina, **J.C. Carmen**, S. Watson, and T.M. Payne. *Toxoplasma gondii*: suicide prevention by a protozoan parasite. FASEB Summer Research Conferences: Microbial Pathogenesis: Mechanisms of Infectious Disease. Snowmass Village, CO, August 14-19, 2004. (Talk)

**Carmen, J.**\* , Hardi, L., Molestina, R., and Sinai, A. *Toxoplasma gondii* inhibits multiple steps in the mitochondrion-dependent arm of apoptosis in the infected cell. Eight International Congress on Toxoplasmosis. Porticcio, Corsica, France, May 27-31, 2005. (Talk)

**Carmen, J.C.**\* , K.S. Frueh, and A.P. Sinai. *Toxoplasma gondii* induces multiple changes in host cell UV-triggered signaling. Molecular Parasitology Meeting XVII. Woods Hole, MA, September 10-14, 2006. (poster)

**Carmen, J.C.**\* , K.S. Frueh, and A.P. Sinai. Complex dysregulation of apoptotic pathways by *Toxoplasma gondii*, an obligate intracellular pathogen. Midwestern Microbial Pathogenesis Conference, Cincinnati, OH, October 20-22, 2006. (poster)

## **Awards**

Brigham Young University Mentoring Grant. Richard Robison and John Carmen. The molecular diversity of *Mycobacterium ulcerans* and the establishment of an *in vitro* model for Buruli ulcer. 2002.

University of Kentucky Daniel R. Reedy Fellowship Recipient 2002-2004

University of Kentucky Dissertation Year Fellowship 2005-2006

## **Training Grant Years**

NIAID T32 AI 49795 From 2003-2005

## **References**

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