

# MARY JANE SIMPSON

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<b>EDUCATION</b>	<b>DUKE UNIVERSITY</b>	<b>2009-Present</b>
	Ph.D. Candidate	
	Department of Chemistry	
	Advisor: Professor Warren S. Warren	
	Expected Graduation: May 2014	
	GPA: 3.65	
<b>HONORS AND AWARDS</b>	<b>DUKE UNIVERSITY</b>	<b>2013</b>
	Certificate in College Teaching	
	<b>STETSON UNIVERSITY</b>	<b>2006-2009</b>
	Bachelor of Science, Chemistry, <i>Cum Laude</i>	
	<b>Kathleen Zielek Fellowship</b>	<b>2013</b>
	Duke University Department of Chemistry	
	<b>Poster Prize</b>	<b>2012</b>
	Duke Center for <i>In Vivo</i> Microscopy Annual Meeting	
	<b>Burroughs-Wellcome Fellowship</b>	<b>2012</b>
	Duke University Department of Chemistry	
	<b>Poster Prize in Melanins Category</b>	<b>2011</b>
	International Pigment Cell Conference	
	<b>IFPCS Travel Award to Conference in Bordeaux, France</b>	<b>2011</b>
	International Federation of Pigment Cell Societies	
	<b>1<sup>st</sup> Place Poster Presentation</b>	<b>2010</b>
	Fitzpatrick Institute for Photonics Annual Meeting	
	<b>Outstanding Senior Award</b>	
	Stetson University Department of Chemistry	<b>2009</b>
	<b>Undergraduate Award in Analytical Chemistry</b>	
	American Chemical Society	<b>2008</b>
	<b>Award for Achievement in Organic Chemistry</b>	
	National Information Center for Polymer Education	<b>2007</b>

## **PUBLICATIONS**

**M. J. Simpson**, J. W. Wilson, C. P. Dall, K. E. Glass, J. D. Simon, W. S. Warren, "Excited State Dynamics of Melanins: the Effects of Iron Content, Photo-Damage, Chemical Oxidation, and Aggregate Size" *Journal of Physical Chemistry A*, submitted.

**M. J. Simpson**, K. E. Glass, J. W. Wilson, P. Wilby, J. D. Simon, W. S. Warren, "Pump-Probe Microscopic Imaging of Jurassic-Aged Eumelanin," *Journal of Physical Chemistry Letters*, **4** (11), 1924-1927 (2013).

**M. J. Simpson**, J. W. Wilson, M. A. Phipps, F. E. Robles, M. A. Selim, W. S. Warren, "Nonlinear Microscopy of Eumelanin and Pheomelanin with Subcellular Resolution," *Journal of Investigative Dermatology*, **133**, 1822-1826 (2013).

T. E. Matthews, J. W. Wilson, J. Y. Zhang, **M. J. Simpson**, J. Y. Jin, W. S. Warren, "In vivo and ex vivo epi-mode pump-probe imaging of melanin and microvasculature," *Biomedical Optics Express*, **2**, 1576-1583 (2011).

J. Wilson, T. Matthews, S. Degan, J. Zhang, **M. J. Simpson**, W. Warren, "Pump-Probe Melanoma Imaging: Applications to High-Resolution and In-Vivo Microscopy," postdeadline paper PDPB5, CLEO 2011, Baltimore, MD.

T. E. Matthews, I. R. Piletic, M. A. Selim, **M. J. Simpson**, W. S. Warren, "Pump-probe imaging differentiates melanoma from melanocytic nevi," *Science Translational Medicine*, **3**, 71ra15 (2011).

## **PRESENTATIONS "Examining Melanin Degradation with Pump-Probe Microscopy"**

Poster Presentation

*Fitzpatrick Institute for Photonics Annual Meeting*, Durham, NC, USA  
11 March 2013

## **"Investigating the Metastatic Potential and Pigment Chemistry of Melanomas Using Pump-Probe Imaging"**

Invited Oral Presentation

*Photonics West*, San Francisco, CA, USA  
2 February 2013

## **"Investigating the Metastatic Potential and Pigment Chemistry of Melanomas Using Pump-Probe Imaging"**

Featured Poster Presentation

*Fitzpatrick Institute for Photonics Breakfast*, Durham, NC, USA  
9 November 2012

**“Investigating the Metastatic Potential and Pigment Chemistry of Melanomas Using Pump-Probe Imaging”**

Poster Presentation

*Center for In Vivo Microscopy Annual Meeting*, Durham, NC, USA

25 October 2012

**“Pump-Probe Imaging of Melanin Identifies Metastatic Potential of Melanoma”**

Oral Presentation

*Frontiers in Optics and Laser Science*, Rochester, NY, USA

16 October 2012

**“Imaging the Distribution of Melanin in Human Skin Lesions with Pump-Probe Microscopy”**

Oral Presentation

*Frontiers in Optics and Laser Science*, San Jose, CA, USA

17 October 2011

**“Imaging the Distributions of Eumelanin and Pheomelanin in Human Tissue”**

Poster Presentation

*Fitzpatrick Institute for Photonics Annual Meeting*, Durham, NC, USA

11 October 2011

**“Imaging the Distributions of Eumelanin and Pheomelanin in Human Tissue”**

Poster Presentation

*International Pigment Cell Conference*, Bordeaux, FR

21 September 2011

**“Beyond Pathology: Pump-Probe Imaging of Skin Slices Provides Additional Indicators of Melanoma”**

Oral Presentation

*Novel Techniques in Microscopy*, Monterey, CA, USA

4 April 2011

**“Novel Melanin Imaging Technique Provides Intrinsic Chemical Contrast and Melanoma Diagnostic Capability”**

Poster Presentation

*Fitzpatrick Institute for Photonics*, Durham, NC, USA

27 October 2010

***TEACHING*****Chemistry and Physics of Cooking Co-Instructor****Spring 2013**

Planning and co-teaching a freshmen seminar course on the chemistry and physics of cooking in collaboration with Dr. Charbonneau

**Science Outreach Projects****2011 –**

Created an optics outreach presentation to teach students at Seawall Elementary about lasers and optics; participated in several chemistry outreach events

**Recitation Teaching Assistant****Spring/Fall 2011**

General Chemistry, CHEM 32

**Laboratory Teaching Assistant**

Organic Chemistry, CHEM 151

**Spring 2010**

General Chemistry, CHEM 31

**Fall 2009*****PROFESSIONAL*****American Chemical Society****2009 –*****MEMBERSHIPS*****American Physical Society****2011 –**