

MARY JANE SIMPSON

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

PUBLICATIONS

M. J. Simpson, J. W. Wilson, C. P. Dall, K. E. Glass, J. D. Simon, W. S. Warren, "Near Infrared 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

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| <i>PROFESSIONAL</i> | American Chemical Society | 2009 – |
| <i>MEMBERSHIPS</i> | American Physical Society | 2011 – |