BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed on Form Page 2.

Photocopy this page or follow this format for each person.**DO NOT EXCEED FOUR PAGES**

NAME	POSITION TITLE
David R. Busch Jr.	Research Assistant

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
St. John's University, Collegeville, MN	B.A. (Hons)	2001	Physics (Minor Mathematics and Philosophy)
University of Pennsylvania, Philadelphia, PA	M.Sc.	2003	Physics
University of Pennsylvania, Philadelphia, PA	Ph.D	2011	Physics

NOTE: The Biographical Sketch may not exceed four pages. Items A and B (together) may not exceed two of the four-page limit. Follow the formats and instructions on the attached sample.

A Positions and Honors

Positions

07/11–	Post Doctoral Researcher with Prof. A. G. Yodh, Dept. of Physics and Astronomy, U. of Pennsylvania
06/02–07/11	Research Assistant to Prof. A. G. Yodh, Dept. of Physics and Astronomy, U. of Pennsylvania
09/00-06/01	Laboratory Assistant to Prof. David Odde Dept. Bioengineering, U. of Minnesota

Awards/Honors

2010	John R. Cameron Young Investigator Award, American Association of Physicists in Medicine (3rd place)
2008	Best Student Poster, Optical Society of America: Biomedical Optics Topical Meeting
2001	All College Honors and Distinction in Physics, St. John's University
1997-2001	Dean's List, St. John's University
1997-2001	Regent's Scholarship, St. John's University

Professional Memberships

- Memberships: American Physical Society (APS), Optical Society of America (OSA), International Society for Optical Engineering (SPIE).
- Peer reviewer for Applied Optics, Optics Letters, Optics Express, Physics in Medicine and Biology, Physics Review Letters, Journal of Physics D: Applied Physics, and Journal of Innovative Optical Health Sciences

B PUBLICATIONS

Peer-Reviewed Publications

[1] D. R. Busch, W. Guo, R. Choe, T. Durduran, M. D. Feldman, C. Mies, M. A. Rosen, M. D. Schnall, B. J. Czerniecki, J. Tchou, A. DeMichele, M. E. Putt, and A. G. Yodh. Computer aided automatic detection of malignant lesions in diffuse optical mammography. *Medical Physics*, 2010.

[2] R Choe, S D Konecky, A Corlu, K Lee, T Durduran, D. R. Busch, B J Czerniecki, J Tchou, D L Fraker, A DeMichele, B Chance, S R Arridge, M Schweiger, J P Culver, M D Schnall, M E Putt, M A Rosen, and A G Yodh. Differentiation of benign and malignant breast tumors by in-vivo three-dimensional parallel-plate diffuse optical tomography. *Journal of Biomedical Optics*, 14(2):(in press), 2009.

[3] G. Alexandrakis, D. R. Busch, G.W. Faris, and M.S. Patterson. Determination of the optical properties of two-layer turbid media using a frequency domain hybrid monte carlo-diffusion model. *Applied Optics-OT*, 40(22):3810–3821, 2000.

Book Chapters

[1] D. R. Busch and B. Chance. *Molecular Imaging: Principles and Practice, Ed. Brian Ross*, chapter Diffuse Optical Tomography and Spectroscopy. BC. Decker Inc., 2009.

Recent Conference Presentations

[1] D. R. Busch, Regine Choe, Turgut Durduran, Lauren Chaby, Mark A. Rosen, and Arjun G. Yodh. Measurement of micro-vascular blood flow in the human breast during compression with diffuse correlation spectroscopy. In *Photonics West BIOS*. SPIE, 2009.

[2] D. R. Busch, Regine Choe, Turgut Durduran, Kijoon Lee, Han Y. Ban, Mary E. Putt, Wensheng Guo, Mark A. Rosen, Mitchell D. Schnall, and Arjun G. Yodh. Tissue-type image segmentation in optical mammography with population-derived probability functions: a step towards optical computer aided diagnosis. In *Photonics West BIOS*. SPIE, 2009.

[3] D. R. Busch, A. S. Rajput, T. Durduran, R. Choe, Z. Zhao, X. Intes, S. Nioka, B. Chance, M. A. Rosen, M. D. Schnall, and A. G. Yodh. A hybrid dynamical diffuse optical tomography & MRI mammography instrument. In *Photonics West BIOS*. SPIE, 2009.

[4] D R. Busch, Chao Zhao, G. Yu, Regine Choe, Turgut Durduran, Mark Rosen, Mitchell D. Schnall, and Arjun G. Yodh. Effects of compression on transillumination measurements of blood flow and chromophore concentrations in human breast tissue. In *OSA Biomedical Optics (BIOMED)*. OSA, 2008.

[5] D. R. Busch, R. Choe, T. Durduran, C. Zhou, G. Yu, M. A. Rosen, M. D. Schnall, and A. G. Yodh. Use of diffuse correlation spectroscopy for non-invasive measurement of blood flow in human breast. In *SPIE Optics East 6771 – Advanced Photon Counting Techniques II*, number 6771-20 in Proceedings of the SPIE, 2007.

[6] D. R. Busch, Z. Zhao, X. Intes, S. Nioka, M. A. Rosen, M.D. Schnall, B. Chance, and A. G. Univ. of Pennsylvania Yodh. Comparison of bulk optical and MR parameters in breast tissue. In *SPIE Optics East 6771 – Advanced Photon Counting Techniques II*, 2007.