

Michael V. Boland, M.D., Ph.D.

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Appointments

2005 to present	Assistant Professor – <i>Wilmer Ophthalmological Institute, Johns Hopkins University</i>
2005 to present	Staff (Active, Full Time) – <i>The Johns Hopkins Hospital</i>

Education and Training

1988 to 1992	BS with Distinction – <i>Electrical and Computer Engineering, University of Colorado at Boulder</i>
1992 to 1993	Graduate Coursework – <i>Electrical and Computer Engineering, University of Colorado at Boulder</i>
1993 to 2001	MD/PhD program – <i>University of Pittsburgh / Carnegie Mellon University</i>
1993 to 1995, 1999 to 2001 1995 to 1999	MD – <i>University of Pittsburgh School of Medicine</i> PhD in <i>Biomedical Engineering</i> – <i>Carnegie Mellon University</i> . Robert F. Murphy, advisor.
2001 to 2002	Transitional Internship – <i>Mercy Hospital of Pittsburgh</i>
2002 to 2005	Ophthalmology Residency – <i>Department of Ophthalmology and Visual Sciences, University of Iowa Hospitals and Clinics</i>
2005 to 2007	Health Sciences Informatics Fellowship (non-degree) – <i>Division of Health Sciences Informatics, Johns Hopkins University</i>
2006 to 2008	Glaucoma Fellowship – <i>Wilmer Ophthalmological Institute, Johns Hopkins University</i>

Research Activities

Publications

1. Boland, M.V., Markey, M.K., Murphy, R.F. 1998. **Automated Recognition of Patterns Characteristic of Subcellular Structures in Fluorescence Microscopy Images.** *Cytometry*. 33(3):366-375. [[PubMed](#), [Reprint](#)]
2. Markey, M.K., Boland, M.V., Murphy, R.F. 1999. **Towards Objective Selection of Representative Microscope Images.** *Biophysical Journal*. 76:2230-2237. [[PubMed](#), [Reprint](#)]
3. Boland, M.V., Murphy, R.F. 1999. **After Sequencing: Quantitative Analysis of Protein Localization.** *IEEE Engineering in Medicine and Biology Magazine*. 18(5):115-119. [[PubMed](#), [Reprint](#)]
4. Murphy, R.F., Boland, M.V., Velliste, M. 2000. **Towards a Systematics for Protein Subcellular Location: Quantitative Description of Protein Localization Patterns and Automated Analysis of Fluorescence Microscope Images.** Proceedings of the 8th International Conference on Intelligent Systems for Molecular Biology (ISMB). 8:251-259. [[PubMed](#), [Reprint](#)]
5. Boland, M.V., Murphy, R.F. 2001. **A Neural Network Classifier Capable of Recognizing All Major Subcellular Structures in Fluorescence Microscope Images of HeLa Cells.** *Bioinformatics*. 17(12):1213-1223. [[PubMed](#), [Reprint](#)]
6. Zhao, T., Velliste, M., Boland, M.V., Murphy R.F. 2005. **Object Type Recognition for Automated Analysis of Protein Subcellular Location.** *IEEE Transactions on Image Processing*. 14(9):1351-1359. [[Reprint](#)]
7. Boland, M.V., Zhang, L., Broman, A.T., Jampel, H.D., Quigley, H.A. 2008 **Comparison of Optic Nerve Head Topography and Visual Field in Eyes with Open Angle and Angle Closure Glaucoma.** *Ophthalmology*. 115(2):239-245. [[PubMed](#), [Reprint](#)]
8. Boland, M.V., Quigley, H.A., Lehmann, H.P. 2008 **The Impact of Risk Calculation on Treatment Recommendations Made by Glaucoma Specialists in Cases of Ocular Hypertension.** *Journal of Glaucoma*. In Press.
9. Chiang, M.F., Boland, M.V., Margolis, J.W., Lum, F., Abramoff, M.D., Hildebrand, P.L. 2008 **Adoption and Perceptions of Electronic Health Record Systems by Ophthalmologists: An American Academy of Ophthalmology Survey.** *Ophthalmology*. In Press.

Editorials, Reviews, Published Abstracts

1. Markey, M.K., Boland, M.V., Murphy, R.F. 1997. **Towards Objective Selection of Representative Microscope Images.** *Molecular Biology of the Cell*. 8:346a. (Abstract)
2. Roden, M.M., Gajnak, J.A., Boland, M.V., Murphy, R.F. 1998. **SLIC and TypIC: Internet Services for Analysis of Subcellular Localization Patterns in Fluorescence Microscope Images.** *Molecular Biology of the Cell*. 9:330a. (Abstract)

3. Boland, M.V., Quigley, H.A. 2007. **Risk Factors and Open-Angle Glaucoma: Classification and Application.** *Journal of Glaucoma.* 16(4):406-418. (Review) [[PubMed](#), [Reprint](#)]

Doctoral Thesis

- Boland, M.V. 1999. **Quantitative Description and Automated Classification of Cellular Protein Localization Patterns in Fluorescence Microscope Images of Mammalian Cells.** Ph.D. dissertation, Carnegie Mellon University. [[PDF](#), [HTML](#)]

Research Presentations

1. Boland, M.V., Markey, M.K., Murphy, R.F. 1996. **Automated Classification of Protein Localization Patterns.** *Molecular Biology of the Cell.* 7:157a. (Poster)
2. Boland, M.V., Murphy, R.F. 1997. *National MD/PhD Student Conference.* (Poster)
3. Boland, M.V., Markey, M.K., Murphy, R.F. 1997. **Automated Classification of Cellular Protein Localization Patterns Obtained via Fluorescence Microscopy.** Proceedings of the 19th Annual International Conference of the IEEE Engineering in Medicine and Biology Society. 594-597. (Paper, co-chair of the 'Biomedical Image Processing' session) [[Reprint](#)]
4. Boland, M.V., Murphy, R.F. 1999. *University of Pittsburgh Cancer Institute Retreat.* (Poster)
5. Boland, M.V., Kardon, R.K. 2004. **Changes in Nerve Fiber Layer Reflectivity Using Optical Coherence Tomography in the Setting of Optic Neuropathy.** Association for Research in Vision and Ophthalmology Annual Meeting. (Poster)
6. Boland, M.V., Lehmann H.P., Quigley, H.A. March 2007. **Risk Assessment and the impact of risk calculation on treatment recommendations for ocular hypertension.** American Glaucoma Society Annual Meeting. (Paper)
7. Boland, M.V., Broman, A.T., Quigley, H.A. May 2007. **Evaluation of Structure-Function Relationships in Eyes with Open Angle and Angle Closure Glaucoma Using a Scanning Laser Ophthalmoscope.** Association for Research in Vision and Ophthalmology Annual Meeting. (Poster)
8. Boland, M.V., Lehmann, H.P. October 2007. **A New Method for Estimating Physician Risk Thresholds for Treatment Using Empiric, Uncertain Recommendations.** Society for Medical Decision Making Annual Meeting. (Poster)
9. Boland, M.V., Lehmann, H.P., Quigley H.A. March 2008. **The Role of Patient Age in Physician Treatment Recommendations for Ocular Hypertension.** American Glaucoma Society Annual Meeting. (Poster)
10. Boland, M.V., Quigley H.A., Danesh-Meyer H.V. April 2008. **Development and Evaluation of a Neurological Hemifield Test.** Association for Research in Vision and Ophthalmology Annual Meeting. (Poster)