

NANO KOREA 2019

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EDUCATION

Harvard University	Ph.D.	Applied Physics	1986
Harvard University	M.Sc	Applied Physics	1982
Cornell University	B.Sc	Applied & Eng. Physics	1981

PROFESSIONAL ACTIVITIES

Professor of Physics and Astronomy, University of Pennsylvania (1997 – present)
Professor of Radiation Oncology, University of Pennsylvania (1997-present)
Associate Professor of Physics, University of Pennsylvania (1993-97)
Assistant Professor of Physics, University of Pennsylvania (1988-93)
Postdoctoral Research Associate w/*Steven Chu* & *H. W. K. Tom*, AT&T Bell Labs (1986-88)

AWARD AND HONORS

James M. Skinner Professor of Science, Endowed Chair
Director, PENN Laboratory for Research on Structure of Matter (LRSM) (2009-)
Director, NSF Materials Research Science & Engineering Center (MRSEC) (2009-)
Alexander von Humboldt Senior Research Award, Heinrich-Heine-University of Düsseldorf
Raymond and Beverly Sackler Lecturer, Tel-Aviv University
Visiting Professor, École Supérieure of Industrial Physics & Chemistry (ESPCI), Paris
Langmuir Lecturer (ACS Division of Colloid and Surface Chemistry)
Sigma Xi National Lecturer in Science (2000-2002)
Fellow, American Association for Advancement of Science (AAAS)
Fellow, Optical Society of America (OSA)
Fellow, American Physical Society (APS)
Fellow, American Institute for Medical and Biological Engineering (AIMBE)
Office of Naval Research Navy Young Investigator
Alfred P. Sloan Fellow
National Science Foundation Presidential Young Investigator

SELECTED SCIENTIFIC PUBLICATIONS

1. O'Leary, M.A., Boas, D.A., Chance, B., and Yodh, A.G., Refraction of diffuse photon density waves, *Physical Review Letters* 69, 2658-2661 (1992).
2. O'Leary, M.A., Boas, D.A., Chance, B., and Yodh, A.G., Experimental images of heterogeneous turbid media by frequency-domain diffusing-photon tomography, *Opt. Lett.* 20, 426-428 (1995).

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3. Ntziachristos, V., Yodh, A.G., Schnall, M., and Chance, B., Concurrent MRI and diffuse optical tomography of breast after indocyanine green enhancement, *Proceedings of the National Academy of Sciences USA* **97**, 2767-2772 (2000).
4. Corlu, A., Choe, R., Durduran, T., Rosen, M.A., Schweiger, M., Arridge, S.R., Schnall, M.D., Yodh, A.G., Three-dimensional in vivo fluorescence diffuse optical tomography of breast cancer in humans. *Optics Express* **15**, 6696-6716 (2007).
5. Boas, D.A., Campbell, L.E., and Yodh, A.G., Scattering and imaging with diffusing temporal field correlations, *Physical Review Letters* **75**, 1855-1858 (1995).
6. Cheung, C., Culver, J.P., Takahashi, K., Greenberg, J.H., Yodh, A.G., *In vivo* cerebrovascular measurement combining diffuse near-infrared absorption and correlation spectroscopies, *Physics in Medicine and Biology* **46**, 2053-2065 (2001).
7. Durduran, T., Yu, G., Burnett, M.G., Detre, J.A., Greenberg, J.H., Wang, J., Zhou, C., and Yodh, A.G., Diffuse optical measurement of blood flow, blood oxygenation and metabolism in human brain during sensorimotor cortex activation. *Optics Letters* **29**, 1766-1768 (2004).
8. Favilla, C.G., Mesquita, R.C., Mullen, M., Durduran, T., Lu, X., Kim, M., Minkoff, D., Kasner, S., Greenberg, J., Yodh, A.G. and Detre, J.A. Optical bedside monitoring of cerebral blood flow in acute ischemic stroke patients during head-of-bed manipulation. *Stroke* **45**, 1269-1274, (2014).
9. Dinsmore, A.D., Yodh, A.G., and Pine, D.J., Entropic control of particle motion using passive surface microstructures, *Nature* **383**, 239-242 (1996).
10. Alsayed, A.M., Islam, M.F., Zhang, J., Collings, P.J., Yodh, A.G., Premelting at defects within bulk colloidal crystals. *Science* **309**, 1112399 (2005).
11. Yunker, P.J., Still, T., Lohr, M.A., and Yodh, A.G., Suppression of the coffee-ring effect by shape-dependent capillary interactions. *Nature* **476**, 308–311, (2011).
12. Yodh, A., and Chance, B., Spectroscopy and imaging with diffusing light, *Physics Today* **48**, 34-40 (1995).
13. Han, Y., Shokef, Y., Alsayed, A.M., Yunker, P., Lubensky, T.C., and Yodh, A.G., Geometric frustration in buckled colloidal monolayers. *Nature* **456**, 898-903 (2008).
14. Cubuk, E.D., Ivancic, R.J.S., Schoenholz, S.S., Strickland, D.J., Basu, A., Davidson, Z.S., Fontaine, J., Hor, J.L., Huang, Y.-R., Jiang, Y., Keim, N.C., Koshigan, K.D., Lefever, J.A., Liu, T., Ma, X.-G., Magagnosc, D.J., Morrow, E., Ortiz, C.P., Rieser, J.M., Shavit, A., Still, T., Xu, Y., Zhang, Y., Nordstrom, K.N., Arratia, P.E., Carpick, R.W., Durian, D.J., Fakhraai, Z., Jerolmack, D.J., Lee, D., Li, J., Riggleman, R., Turner, K.T., Yodh, A.G., Gianola, D.S., and Liu, A.J., Structure-property relationships from universal signatures of plasticity in disordered solids. *Science* **358**, 1033-1037 (2017).
15. Islam, M.F., Rojas, E., Bergey, D.M., Johnson, A.T., and Yodh, A.G., High weight fraction surfactant solubilization of single-wall carbon nanotubes in water, *Nano Letters* **3**, 269-273 (2003).

RESEARCH INTERESTS

- Biomedical Optics (Diffuse Optical Spectroscopy & Imaging, Photodynamic Therapy)
- Soft Condensed Matter Physics (Colloids, Liquid Crystals, Nanotubes/Nanocrystals)
- Optical Physics (Nonlinear Optics, Ultrafast, Optical Microscopies, Scattering)