

## DIVISION OF BIOMEDICAL ENGINEERING

- [Prospective Students](#)
- [Education](#)
- [Admissions](#)
- [Research](#)
- [People](#)
- [News](#)
- [Events](#)
- [Employment & Internships](#)
- [Facilities & Resources](#)
- [Contact BME](#)

[Go to DSE Home](#)

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- [Academic Technology](#)
- [Departments & Divisions](#)
- [Find Degree Programs](#)
- [Academic Calendar](#)
- [Academic Affairs](#)

## BME People

# Sean J Kirkpatrick

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**Web Site:** <http://www.bme.ogi.edu/biomedicaloptics/kirkpatrick/>

### Current Appointments

Associate Professor

### Education

BS, Gannon University, 1986

PhD, University of Miami, 1992

Postdoctoral Fellow., The Johns Hopkins University, 1992-1994

### Department(s)

*Biomedical Engineering*

### Research Interests

My primary research effort focuses on the physics of light scattering in biological tissues (and fluids) and how to exploit this scattered light to gain insight into the dynamics, structure, and mechanics of biological tissues. Primary focus is on the origins and applications of the speckle phenomenon.

Research on speckle includes numerical simulations, statistical analysis of speckle, and the use of speckle in optical elastography.

### Research Project(s)

*Acousto-optical elastography*

*Laser speckle measurements of mechanical properties*

### Research Group(s)

*Biomedical Optics*

### Selected Publications

Wang, R.K. and Kirkpatrick, S.J., Tissue Doppler Optical Coherence Elastography for Strain Rate and Strain Mapping of Soft Tissue in Real Time, *Appl. Physics Lett.* 89, 144103, 2006

Kirkpatrick, S.J., Wang, R.K., and Duncan, D.D., Kulesz-Martin, M., and Lee, K., Imaging the mechanics of skin lesions by in vivo acousto-optical elastography, *Opt. Express*, 14(21) 9771-9779, 2006.

Kirkpatrick, S.J., Wang, R.K., and Duncan, D.D., OCT-based elastography for large and small deformations, *Opt. Express* 14(24) 11585-11597, 2006.

Wang, R.K., Kirkpatrick, S.J., and Hinds, M.T., Phase-sensitive optical coherence elastography for mapping tissue microstrains in real time, *Appl. Physics Lett.* 90, 164105, 2007.



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[Clinical Trials](#)

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[Administration](#)  
[Shared Resources](#)  
[Technology Transfer](#)  
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[College of Pharmacy](#)  
[Admissions](#)  
[Student Services](#)

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