Matthew Weed

PhD in optics, with experience in public policy and leadership

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Dec 2012 (expected)	PhD in optics	GPA 3.72	University of Central Florida
Dec 2009	MS in optics	GPA 3.78	University of Central Florida
May 2007	BS in physics	GPA 3.89	Rensselaer Polytechnic Institute

Research

University of Central Florida

2007–present

As graduate research assistant to Dr Winston V. Schoenfeld (CREOL), I currently

- design and simulate integrated photonic devices analytically and numerically,
- fabricate micro- and nanoscale semiconductor structures in clean rooms,
- image devices using optical, electron, and atomic-force microscopy,
- optically characterize microscale devices and thin films.

Rensselaer Polytechnic Institute

2006–2007

As undergraduate research assistant to Dr Peter Persans (Physics), I characterized thin-film CIGS photovoltaic cells by photoreflectance modulation spectroscopy.

2003–2007

In the Lally School of Management & Technology, I completed 32 credit hours of coursework in management, economics, finance, and marketing.

Kollmorgen Electro-Optical (Northampton, MA)

Summer 2006

As systems engineer co-op, I developed quantitative, image-resolution benchmarks across business units for naval periscopes.

Public policy

The Optical Society (OSA)

2012–2014

As a member of the *Public Policy* committee, I guide the advocacy effort of the international optics community, and I generate policy statements for immigration, natural resource management, and journal open access.

2012

On the *Harnessing Light II* committee, I advise a joint OSA, SPIE, APS, and IEEE team on the dissemination of the National Academy of Science's report, *Optics and Photonics: Essential Technologies for Our Nation*.

2010–2012

Under *Federal Science Funding Advocacy*, I establish and maintain relationships with House and Senate offices from Florida and Oregon to relay the importance of consistent federal funding of research and commercialization.

Leadership

University of Central Florida

Summer 2009

For the Office of Technology Transfer, I translated US Patent documentation of 46 UCF technologies into single-page summaries for license marketing. For 9 pieces of related intellectual property, I developed a “Fields of Use” report targeting viable markets for technology valuation during licensing negotiations.

NSF — Research Experience for Undergraduates

2012

As program organizer, I selected 6 undergraduate students from around the US and placed them in research positions at CREOL for a 10-week summer program. I conducted weekly meetings to review progress and discuss research projects.

Professional Society Leadership (OSA, SPIE)

2007–2011

As Student Chapter treasurer, then president, and finally outreach coordinator, I

- secured $2125 in grants to fund educational outreach and professional development,
- developed and led *CREOL Educators' Day* for K–8 teachers from 10 Florida schools,
- secured $8500 in grants to fund the construction of educational demonstrations,
- organized 34 educational outreach events, reaching over 2100 students, teachers, and parents, in more than 15 schools around Florida.

Scientific contributions

[invited paper]

H.P. Seigneur, M.D. Weed, M.N. Leuenberger, and W.V. Schoenfeld, "Controlled on-chip single-photon transfer using photonic crystal coupled-cavity waveguides", *Advances in OptoElectronics* (2011)

M.D. Weed, C. Williams, P.J. Delfyett, W.V. Schoenfeld, “Feedback in coupled-resonance optical waveguides”, CLEO 2012, Proc. OSA (2012)

M.D. Weed, H.P. Seigneur, and W.V. Schoenfeld, “Cladding index engineering of the photonic properties of single-mode photonic crystal devices”, Optics & Photonics 2010, Proc. SPIE, 776403 (2010)

M.D. Weed, H.P. Seigneur, and W.V. Schoenfeld, "Optimization of complete band gaps for photonic crystal slabs through use of symmetry breaking hole shapes", Photonics West 2009, Proc. SPIE, 72230Q (2009)

[invited talk]

H.P. Seigneur, M.D. Weed, G. Gonzales, M.N. Leuenberger, and W.V. Schoenfeld, "The physics and challenges of realizing quantum teleportation using quantum dots within a quantum network", NanoFlorida (2009)

[invited talk]

H.P. Seigneur, M.D. Weed, M.N. Leuenberger, and W.V. Schoenfeld, "Self-assembled quantum dots within photonic crystal nanocavities for the realization of quantum networks", Particles (2008)