Joshua H. Gurian

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Professional Experience

Dynavac Senior Scientist Hingham, MA March 2013 - Present

- Lead PVD thin film and space simulation research and development efforts for custom vacuum system manufacturer, creating turn-key solutions for aerospace, industrial, and scientific customers.
- Developed Dynavac Application Laboratory as sales generation tool (\$1.6M in sales for 2016). Manage Application Laboratory staff and projects.
- Support Business Development and Engineering groups with scientific and technical expertise.
- Provide oversight of proposal development, project cost estimating, and project management.
- Supervise technical outreach of the organization, including conference presentations and technical white papers.

A.L.P. Lighting Components Optical Science Consultant

Boston, MA September 2012 - February 2013

 Provided Chicago-based OEM optical research and development consulting on laser ablated PMMA and PET lighting diffusers for fluorescent, LED and nextgeneration OLED technologies.

University of British Columbia Invited Visiting Researcher

Vancouver, BC April 2012 - July 2012

• Supervised a team of students to experimentally implement ultracold molecular plasma spectroscopy for exploring the quantum and classical dynamics of a highly-excited supersonic NO beam.

Centre National de la Recherche Scientifique Postdoctoral Researcher

Orsay, France February 2010 - January 2012

- Responsible for the design and execution of optical trapping and cooling of atomic gases for ultracold many-body interaction and atomic imaging experiments.
- Commercialization research and development of state-of-the-art cold atom based bright ion and electron sources.

University of Virginia Graduate Research Assistant

- Conducted and published experimental and computational microwave ionization research on laser excited (Rydberg) atoms.
- Designed a novel Nd:YLF-pumped kHz dye laser system for high-resolution laser spectroscopy of lithium atoms.

Wesleyan University	Middletown, CT
Undergraduate Research Assistant	Spring 2001 - Spring 2004

• Carried out Stark recurrence laser spectroscopy of highly-excited noble gas atoms.

Education

University of Virginia	Charlottesville, VA
Ph.D. PhysicsM.A. Physics	May 2010 December 2009
Wesleyan University	Middletown, CT
 B.A. Physics with High Honors 	May 2004

Relevant Technical Skills

- Expert in experimental atomic, molecular, and optical physics. Extensive laser experience including saturated-absorption locked diode systems, high-resolution CW Ti:Sapphire, ultra-fast laser systems, as well as Nd:YLF and Nd:YAG pumped dye laser systems, electro- and acousto-optics, precision optical alignment and detectors.
- Significant expertise in modern thin film sputtering, evaporation, and PECVD techniques, tools, and system design. Experience in coating design and thin film process development.
- Extensive experience with Labview-based data acquisition system design, as well as with common data analysis software, including MatLab, Origin, gnuplot, and Igor.
- Programming experience in C++, python, perl, Maple, Mathematica, Java, and bash. Experience with massively parallel computational physics modeling and analysis. Expertise with standard desktop design, CAD, publishing, and project management tools, including SolidWorks, Eagle, LATEX 2€, SketchUp, MetaPost, and MS Project.
- Experience with a wide variety of laboratory and measurement equipment, including multistage UHV vacuum systems, high-voltage sources, charged particle detectors, circuit design and layout, as well as extensive microwave design knowledge.

Charlottesville, VA Spring 2005 - Fall 2009