

724 Kirkwood Dr.  
Greencastle, IN 46135  
USA  
url: <http://persweb.wabash.edu/facstaff/tunguz/>  
phone: +1 650 353 7663  
Skype: btunguz  
e-mail : tunguz@gmail.com

# Bojan Tunguz

---

<b>Education</b>	1999 - 2006	<b>University of Illinois at Urbana-Champaign</b>	<b>Urbana, IL</b>
		Ph.D. in Physics. Cumulative GPA 4.0/4.0 Ph.D. Thesis: <i>Non-local Gauge field theory</i>	
	1997 - 1999	<b>Stanford University</b>	<b>Stanford, CA</b>
		M.S., Applied Physics, June 1997. Cumulative GPA 3.7/4.0	
	1993 - 1997	<b>Stanford University</b>	<b>Stanford, CA</b>
		B.S., Physics, June 1997. Cumulative GPA 3.5/4.0 Honors Thesis: <i>Production and Physical properties of Aerogels.</i>	

**Honors and Awards** University Fellowship at University of Illinois at Urbana-Champaign (1999-2000).

Incomplete List of Teachers Ranked as Excellent by Their Students, Fall Semester 2002, Summer Semester 2003, Summer Semester 2004, Fall Semester 2004.

Departmental Honors in Physics, Stanford University, 1997.

Undergraduate Research Opportunity Scholarship, Stanford University 1996.

## Experience

## Teaching

	<b>Wabash College</b>	<b>Crawfordsville, IN</b>
2008 - 2009		
	<i>Visiting Assistant Professor of Physics</i>	
	Classes taught:	
	<ul style="list-style-type: none"><li>• Introduction to Astronomy. An introductory Astronomy class for non-Science and engineering majors. Students in the class are involved in interactive in-class polls, assignments, exercises and laboratory work.</li><li>• Intermediate Mechanics. A lecture course on mechanics for Physics majors.</li><li>• Modern Physics. A lecture course on modern Physics for science majors.</li><li>• Advanced Quantum Mechanics. A second semester quantum mechanics course for Physics majors.</li><li>• Electronics. A lab-based intermediate electronics course for</li></ul>	

Physics majors.

**DePauw University      Greencastle, IN**

2007 - 2008

*Part Time Assistant Professor of Physics*

Classes taught:

- Physics for Poets. An introductory Physics class for non-Science and engineering majors. The class involves use of most advanced technological teaching tools, with students being involved in interactive in-class polls, assignments and exercises.
- Introductory Physics laboratory. Laboratory exercises for the science and engineering Physics.
- Introductory Physics – second semester. Lectures for the class based on conceptual understanding of essential Physics concepts. Class aimed at science and engineering majors.
- Intermediate Thermodynamics. A lecture course on thermodynamics for Physics majors.

**University of Illinois      Urbana, IL**

2001 - 2006

*Teaching Assistant*

Classes taught:

- An introductory Electricity and Magnetism class. Teaching requirements included leading the discussion section, grading homework and exams, and supervising laboratory exercises.
- An upper level undergraduate Electricity and Magnetism. Teaching requirements included preparing answer sheets for homework problems, grading homework and an occasional guest lecture for the main instructor.
- An upper level undergraduate Optics. Teaching requirements included preparing answer sheets for homework problems, grading homework, and directing students in the laboratory part of the class as a sole instructor.

**Stanford University      Stanford, CA**

1997

*Teaching Assistant*

Taught a discussion and lab section of introductory Modern Physics class.

**Research**

**University of Illinois      Urbana, IL**

2001 – 2006

*Research Assistant*, with Prof. Yoshitsugu Oono

My Physics research involved the study of non-local gauge field theories. This is a natural extension of the local gauge field theories when we assume that the theory is invariant under an arbitrary unitary differential transformation. With these assumptions we recover a renormalizable theory of gravity.

I conducted independent research project where I developed a dynamic peer review website Naboj ([www.naboj.com](http://www.naboj.com)). This website allows users to write reviews of scientific articles posted on [www.arxiv.org](http://www.arxiv.org). The project involved an extensive use of PHP, Perl, and MySQL. Naboj has been featured in the peer review discussion on Nature's website and in the print edition of Nature Physics.

## **Stanford University**

**Stanford, CA**

1997 - 1999

*Research Assistant*

I worked in the Theory Group of the Gravity Probe B experiment. I was involved in research on gravitational collapse of the massless scalar field in spherically symmetric space-time.

1996 - 1997

*Honors Thesis Research*, with Prof. Douglas Osheroff

I worked on production and determination of physical properties of aerogels.

1994 – 1996

*Undergraduate Research Assistant*, with Prof. Douglas Osheroff

I worked on determination of magnetic properties of exfoliated graphite.

### **Affiliations**

American Physical Society, American Mathematical Society.

### **Conferences**

Presented research at the 2005 April Meeting of the American Physical Society.

Presented a DyKnow user group tutorial *Vectors in Physics Problems* at the June 2008 DyKnow conference

### **Languages**

Fluent in English and Croatian. Conversational knowledge of Spanish, Italian and German

### **Publications**

Bojan Tunguz, *Non-Local Gauge Field Theory I: Classical Theory*. In preparation.  
*Non-Local Gauge Field Theory II: Quantum Theory*. In preparation.

*Effective Non-Local  $\Phi^4$  Theory.* In preparation.

*Gauging of the Spin Degrees of Freedom.* In preparation

**Skills**

*Computer:* Knowledge of C, C++, HTML, PHP, Perl, SQL, Excel, Mathematica and LaTeX. I am proficient with Windows, Linux and Macintosh operating systems