# Eric O. Korman


CONTACT INFORMATION

Department of Mathematics
David Rittenhouse Laboratory
209 South 33rd St.
Philadelphia, PA 19104

*Cell:* 412.337.6338

ekorman@math.upenn.edu


RESEARCH INTERESTS

Mathematical physics, noncommutative geometry, symplectic geometry, Lie groups and algebras, and Clifford algebras.

EDUCATION

**University of Pennsylvania**, Philadelphia, PA
Ph.D., Mathematics. Expected: April 2014.

**University of Pittsburgh**, Pittsburgh, PA
B.S., (Honors) Mathematics with a minor in physics. August 2008
Honor's Thesis: *Clifford Algebras and Bilinear Forms on Spinors*
Major GPA: 4.0/4.0, Overall GPA: 3.933/4.0.

TEACHING AND WORK EXPERIENCE

**University of Pennsylvania**
*Teaching Assistant*
Fall 2009: Taught one recitation of MATH-114, which covers functions of several variables, vector-valued functions, partial derivatives and applications, double and triple integrals, conic sections, polar coordinates, vectors and analytic geometry, first and second order ordinary differential equations.

**Private Tutor** August 2008 - present
Tutor college students in algebra, trigonometry, calculus 1, calculus 2, differential equations, and discrete mathematics.

**Tutor.com**
*Tutor* July 2008 - present
Online high school and college tutor for algebra 2, calculus, and physics.

**Tutor.com**
*Tutor Mentor* October 2008 - July 2009
Managed a team of eight tutors.

**Athletics Department, University of Pittsburgh**
*Tutor* September 2005 to April 2008
Tutor student athletes in the following courses: algebra, precalculus, business calculus, calculus 1, calculus 2, calculus 3, linear algebra, physics 1, physics 2, logic, and computer programming.

**Mathematics Department, University of Pittsburgh**
*Grader*
Fall 2007: Graded homework for Matrix Theory and Differential Equations (MATH 0250) and Analytic Geometry and Calculus 3 (MATH 0240).
Fall 2006: Graded homework for Matrix Theory and Differential Equations (MATH 0250).

## Research and Academic Experiences

**Physics Department, Virginia Tech**
*Summer School on Mathematical String Theory* June 21, 2010 - July 2, 2010

**Mathematics Department, Princeton University**
*RTG Summer Program in Analysis and Geometry* July 27, 2009 - August 14, 2009
Took courses in Fourier analysis, several complex variables, and partial differential equations in geometry.

**Honors College, University of Pittsburgh**
*Brackenridge Summer Fellowship* Summer 2008
An interdisciplinary fellowship of forty students who work on independent projects and meet in weekly seminars.
Research topic: Spinors and triality
Advisor: Dr. George Sparling (Mathematics department)

**Honors College, University of Pittsburgh**
*Chancellor's Undergraduate Research Fellowship* Spring 2008
Research topic: Clifford Algebras and spinors in eight dimensions with various metric signatures.
Advisor: Dr. George Sparling (Mathematics deparment)

**Cornell University**
*Summer Mathematics Institute* Summer 2007
Took an upper-level course in real analysis. Also worked on a project in cryptography and made outreach material for high school students.

## Talks Given

**University of Pennsylvania**
*Graduate Student Pizza Seminar*
"Symplectic geometry and quantization"

**2009 Joint Mathematics Meetings**
*Special Session on Conformal Geometry, Twistor Theory, and Integrable Systems*
"Fierz Identities for Real Spin Representations"

**University of Pittsburgh**
*Laboratory of Axiomatics*, October 23, 2008
"Bilinear Forms and Fierz Identities for Real Spinors"

**University of Pittsburgh**
*Allegheny Mountain Section of the MAA*, April 11, 2008
"Clifford Algebras"

**Carnegie Mellon University**
*Mathematical Physics Seminar*, April 7, 2008
"Clifford Algebras and Spinors"

## Publications

*Bilinear Forms and Fierz Identities for Real Spin Representations.* `arXiv:0901.0580[gr-qc]`.
Submitted to *Advances in Applied Clifford Algebras*

## Awards

**Mathematics Department, University of Pittsburgh**
*Culver Award for Outstanding Performance in Mathematics* — April 2008

**University of Pittsburgh**
*Arts and Sciences Undergraduate Studies Scholarship for Outstanding Academic Achievement* — Fall 2007

## Computer Skills

Experience with: Java, Python, Perl, C/C++, Visual Basic, HTML, Mac OS, Linux, Windows, Maple, Mathematica, Matlab, LaTeX, Microsoft Office (Word, Excel, Powerpoint).