Charles Siegel

Kavli IPMU
University of Tokyo
5-1-5 Kashiwanoha, Chiba, Japan 077-0882
✉ *charles.siegel@ipmu.jp*

Personal information

Date of birth	April 25, 1985
Place of birth	San Francisco, CA
Nationality	United States

Education and Employment

2012–Present **Postdoc**, *University of Tokyo*, Kashiwanoha, Japan.
Kavli Institute for the Mathematics and Physics of the Universe

2007–2012 **Ph.D. in Mathematics**, *University of Pennsylvania*, Philadelphia, PA.
advisor Prof. Ron Donagi

2003–2007 **B.S. in Mathematics**, *Rutgers University*, New Brunswick, NJ.
Graduated with highest honors

Honors and awards

2012 **Young Researcher Overseas Visits Grant**, *Kavli IPMU*.
Grant to spend Jan-Feb 2013 visiting Humboldt-Universität zu Berlin

2009 **National Science Foundation Graduate Research Fellowship**.
Awarded Honorable Mention

2007–2011 **Benjamin Franklin Fellowship**, *University of Pennsylvania*.
Full tuition, health insurance and a yearly stipend of $21,000

2005–2007 **Weill Scholarship**, *Rutgers University*.
Scholarship on the basis of academic performance

2005 **Lawrence Corwin Scholarship**, *Rutgers University*.
Awarded for performance on a special examination.

Publications and Preprints

- Satoshi Kondo, Charles Siegel, Jesse Wolfson,
  A Modular Operad of Curves Embedded in $\mathbb{P}^\infty$,
  In Preparation.
- Charles Siegel,
  Schottky-Jung Relations for Higher Degree Cyclic Covers,
  In Preparation.
- Satoshi Kondo, Charles Siegel, Jesse Wolfson,
  Modular Operads of Embedded Curves,
  arXiv:math/1407.6558, Submitted 2014/8/18
- Charles Siegel,
  Strongly Cyclic Coverings of Cyclic Curves,
  arXiv:math/1407.5191, Submitted 2014/8/19

- Charles Siegel,
  The Moduli of Klein Covers of Curves,
  arXiv:math/1407.3530, Submitted 2014/8/21
- Charles Siegel,
  The Schottky problem in genus five,
  arXiv:math/1302.5946, Submitted 2013/7/26
- Charles Siegel, Avy Soffer, Chris Stucchio,
  Improved Error Bounds for Dirichlet-to-Neumann Absorbing Boundaries,
  arXiv:math/0811.0765

Experience

Teaching

Fall 2014-Present **Writer**, *Curious Stardust, a group blog for the Kavli Foundation.*
Writing about mathematics for the general public

Fall 2013 **Minicourse on the Madsen-Weiss Theorem**, *Kavli IPMU.*
Series of lectures on the proof of the Madsen-Weiss Theorem

Summer 2012 **Mirror Symmetry working group**, *University of Georgia Algebraic Geometry Summer School.*
Teaching Assistant in charge of problem sessions

Spring 2012 **Math 104 (Calculus I)**, *University of Pennsylvania.*
Teaching Assistant in charge of recitations

Fall 2011 **Math 370 (Abstract Algebra I)**, *University of Pennsylvania.*
Teaching Assistant in charge of recitations

Summer 2010 **Math 170 (Ideas in Mathematics)**, *University of Pennsylvania.*
Lecturer in charge of course

Spring 2010 **Math 370 (Abstract Algebra I)**, *University of Pennsylvania.*
Teaching Assistant in charge of recitations

Fall 2009 **Math 116 (Honors Calculus II)**, *University of Pennsylvania.*
Teaching Assistant in charge of recitations and administration of weekly quizzes

Summer 2009 **Math 104 (Calculus I)**, *University of Pennsylvania.*
Lecturer in charge of course

Spring 2009 **Math 240 (Calculus III)**, *University of Pennsylvania.*
Teaching Assistant in charge of recitations and administration of weekly quizzes

Fall 2008 **Math 371 (Abstract Algebra II)**, *University of Pennsylvania.*
Teaching Assistant in charge of recitations.

Summer 2007-Present **Owner and Writer**, *Rigorous Trivialities Blog.*
rigtriv.wordpress.com

Fall 2007 **Math 115 (Precalculus)**, *Rutgers University.*
Recitation Mentor in charge of recitations and administration of weekly quizzes

Spring 2006 **Math 152 (Calculus II for Math and Physical Sciences)**, *Rutgers University.*
Teaching Assistant in charge of recitations and administration of weekly quizzes

Fall 2005	**Math 151 (Calculus I for Math and Physical Sciences)**, *Rutgers University*.
	Peer Mentor providing assistance to the Teaching Assistant during recitation and with grading
Spring 2005-Spring 2007	**Rutgers Learning Center**, *Rutgers University*.
	Tutoring mathematics courses at all levels, particularly Calculus and Abstract Algebra

Research

Jun 2007–Aug 2007	**Undergraduate Researcher**, *Rutgers University*, New Brunswick, NJ.
	Project: Equivariant Cohomology of the Lagrangian Grassmannian
	Under the direction of Prof. Anders Buch
Jun 2007–Aug 2007	**Undergraduate Researcher**, *Mt. Holyoke College*, South Hadley, MA.
	Project: Polynomial Representations of Knots
	Under the direction of Prof. Alan Durfee and Prof. Donal O'Shea
Jun 2005–Aug 2005	**Undergraduate Researcher**, *Rutgers University*, New Brunswick, NJ.
	Project: Improved Error Bounds for Dirichlet-to-Neumann Absorbing Boundaries
	Under the direction of Prof. Avraham Soffer

Service

Sep 2013-May 2014	**Organizer**, *Kavli IPMU*, Kashiwa, Japan.
	Organizer for joint Math and Physics Conformal Blocks Seminar
Mar 2013-Present	**Reviewer**.
	Zentralblatt MATH
Sep 2009-Apr 2011	**Organizer**, *University of Pennsylvania*, Philadelphia, PA.
	Organizer for Graduate Student Seminar
Sep 2009-Apr 2010	**Organizer**, *University of Pennsylvania*, Philadelphia, PA.
	Organizer for Undergraduate Math Seminar and Reading Program
Jan 2008	**Organizer**, *University of Pennsylvania*, Philadelphia, PA.
	Founded the Graduate Student Algebra Seminar
Jan 2006	**Organizer**, *Rutgers University*, New Brunswick, NJ.
	Organized an undergraduate String Theory course

Conference participation

Fall 2014	**AGNES**, *University of Pennsylvania*, Philadelphia, PA.
Fall 2014	**Georgia Algebraic Geometry Symposium**, *University of Georgia, Athens*, Athens, GA.
Summer 2014	**International Congress of Mathematicians**, Seoul, South Korea.
Summer 2013	**Conformal Blocks, Vector Bundles on Curves and Moduli of Curves**, *Sapienza University*, Rome, Italy.
Summer 2013	**Conference on Moduli**, *RIMS*, Kyoto, Japan.
Spring 2013	**Complex Geometry Conference**, *KIAS*, Seoul, South Korea.
Spring 2013	**AGNES**, *Yale University*, New Haven, CT.
Fall 2012	**Special Seminar on Theta Functions**, Kochi, Japan.
Summer 2012	**GAeL XX**, Grenoble, France.
Summer 2012	**Georgia Algebraic Geometry Symposium**, *University of Georgia, Athens*, Athens, GA.

Summer 2012	**VIGRE Algebraic Geometry Summer School**, *University of Georgia, Athens*, Athens, GA.
Spring 2012	**AGNES**, *University of Massachusetts, Amherst*, Amherst, MA.
Fall 2011	**AGNES**, *Stony Brook University*, Stony Brook, NY.
Jun 2011	**PCMI Summer School on Moduli Spaces of Riemann Surfaces**, *PCMI*, Park City, UT.
Spring 2011	**AGNES**, *Massachussetts Institute of Technology*, Cambridge, MA.
Fall 2010	**AGNES**, *University of Connecticut*, Storrs, CT.
Jun 2010	**ICTP Summer School on Hodge Theory**, *ICTP*, Trieste, Italy.
Jun 2009	**RTG Graduate Summer School "Geometry of Quantum Fields and Strings"**, *University of Pennsylvania*, Philadelphia, PA.
Jun 2008	**Conference on vector bundles in honour of S. Ramanan**, Miraflores de la Sierra (Madrid, Spain).
Mar 2008	**Workshop on Algebro-Geometric Derived Categories and Applications**, *Institute for Advanced Study*, Princeton, NJ.
Nov 2007	**Gauge Theory and Representation Theory**, *Institute for Advanced Study*, Princeton, NJ.
Aug 2007	**Young Mathematicians Conference 2007**, *Ohio State University*, Columbus, OH.
July 2007	**Deformation Theory and Moduli in Algebraic Geometry**, *MSRI*, Berkeley, CA.
Aug 2006	**Young Mathematicians Conference 2006**, *Ohio State University*, Columbus, OH.

Presentations

Fall 2014	A Modular Operad of Embedded Curves Topology Seminar at the University of Tokyo
Fall 2014	A Modular Operad of Embedded Curves Harvard/MIT Algebraic Geometry Seminar at Harvard University
Fall 2014	A Modular Operad of Embedded Curves Algebra Seminar at Rutgers University
Fall 2014	A Modular Operad of Embedded Curves Algebra Seminar and Math/Phys Seminar at University of Pennsylvania
Fall 2014	A Modular Operad of Embedded Curves Algebraic Geometry Seminar at University of California, San Diego
Fall 2014	A Modular Operad of Embedded Curves Geometry/Topology Seminar at University of California, Davis
Fall 2014	A Modular Operad of Embedded Curves Algebraic Geometry Seminar at University of Georgia, Athens
Summer 2014	The Moduli of Klein Four Covers of Curves Short Communication at the International Congress of Mathematicians, Seoul, Korea
Summer 2014	Trees and an Affine Cover of $\overline{\mathcal{M}}_{0,n+1}$ Get Together Math Seminar, Kavli IPMU, Japan

Summer 2014	Trees and an Affine Cover of $\overline{\mathcal{M}}_{0,n+1}$ Algebraic Geometry Seminar, Humboldt-Universität zu Berlin
Fall 2013	A Mathematical Introduction to Conformal Blocks Conformal Blocks Seminar, Kavli IPMU, Japan
Spring 2013	Conformal Blocks and the Moduli of Curves String Lunch Seminar, Kavli IPMU, Japan
Spring 2013	The Schottky Problem in genus 5 Algebraic Geometry Seminar, Research Insitute for the Mathematical Sciences, Kyoto University
Spring 2013	The Schottky Problem in genus 5 Algebra, Geometry and Physics Seminar, SUNY Stony Brook
Spring 2013	The Schottky Problem in genus 5 Algebraic Geometry and Number Theory Seminar, Boston College
Spring 2013	Prym Varieties of Cyclic Covers Math-Physics Joint Seminar, University of Pennsylvania
Spring 2013	Cyclic Covers, Prym Varieties and the Schottky-Jung Relations Algebra Seminar, Rutgers University
Spring 2013	Prym Varieties of Cyclic Covers Algebraic Geometry Seminar, Johns Hopkins University
Spring 2013	Prym Varieties of Cyclic Covers Algebraic Geometry Seminar, University of Georgia, Athens
Spring 2013	Cyclic Covers, Pryms and Moduli Get Together Math Seminar, Kavli IPMU, Japan
Spring 2013	The Schottky Problem in Genus Five Research seminar Algebraic and Arithmetic Geometry, Leibniz Universität Hannover
Spring 2013	The Schottky Problem in Genus Five Algebraic Geometry Seminar, University of Warwick
Spring 2013	The Schottky Problem in Genus Five Seminari Geometria Algebraica, Universitat de Barcelona
Spring 2013	The Schottky Problem in Genus Five Algebraic Geometry Seminar, Humboldt-Universität zu Berlin
Fall 2012	The Schottky Problem in Genus Five Special Seminar on Theta Functions, Kochi, Japan
Summer 2012	The Schottky Problem in Genus Five Mathematics - String Theory Seminar, Kavli IPMU, Japan
Spring 2012	The Schottky Problem in Genus Five GAeL XX, Grenoble, France
Spring 2012	The Schottky Problem in Genus Five Georgia Algebraic Geometry Symposium, University of Georgia, Athens
Spring 2012	The Schottky Problem in Genus Five AGNES Poster Session, University of Massachusetts, Amherst
Spring 2012	The Schottky Problem in Genus Five Algebraic Geometry Seminar, University of Georgia, Athens

Spring 2012	Curves and their Jacobians
	Graduate Student Colloquium, University of Georgia, Athens
Fall 2011	The Schottky Problem and Genus Five Curves
	Algebra Seminar, Rutgers University
Spring 2011	The Schottky Problem
	Graduating Student Seminar, University of Pennsylvania
Spring 2011	Theta Functions and Sums of Squares
	Graduate Student Seminar, University of Pennsylvania
Summer 2010	The Schottky Problem
	ICTP Summer School in Hodge Theory
Spring 2010	Toric Residues
	GLSM Seminar, University of Pennsylvania
Spring 2010	Kontsevich's Formula and Related Results
	Graduate Student Algebra Seminar, University of Pennsylvania
Spring 2010	What is Quantum Cohomology?
	Graduate Student Algebra Seminar, University of Pennsylvania
Spring 2010	Solving the Cubic with Invariant Theory
	Graduate Student Seminar, University of Pennsylvania
Spring 2009	Enumerative Geometry
	Graduate Student Seminar, University of Pennsylvania
Spring 2008	Molien's Theorem
	Graduate Student Algebra Seminar, University of Pennsylvania
Spring 2008	Quotients of Schemes by Finite Groups
	Graduate Student Algebra Seminar, University of Pennsylvania
Spring 2008	Polynomial Knots
	Graduate Student Seminar, University of Pennsylvania
Spring 2007	Uniformization of Surfaces via Ricci Flow
	Graduate Student Geometry/Topology Seminar, Rutgers University
Fall 2006	Polynomial Knots
	Graduate Student Seminar, Rutgers University
Fall 2006	Teichmuller Spaces I & II
	Graduate Student Geometry/Topology Seminar, Rutgers University
Aug 2006	On the Perturbation of Polynomial Knots
	Young Mathematicians Conference 2006, with Emily List

Languages

English	Native Speaker
Japanese	Intermediate
Spanish	Beginner
French	Reading knowledge
German	Reading knowledge

Updated

October 5, 2014