

Corbett Redden

CURRICULUM VITAE

CONTACT INFORMATION

Long Island University, LIU Post
720 Northern Boulevard
Brookville, NY 11548

Email: corbett.redden@liu.com
Homepage: <http://myweb.liu.edu/~dredden/>
Phone: +1 516-299-3487 (office)

EDUCATION

Ph.D. in Mathematics, University of Notre Dame, August 2006
Ph.D. Thesis Title: Canonical metric connections associated to string structures.
Ph.D. Advisor: Prof. Stephan Stolz
M.S. in Mathematics, University of Notre Dame, May 2004
B.A. in Mathematics and Philosophy, Rice University, May 2001

EMPLOYMENT

Associate Professor of Mathematics, Long Island University (LIU Post), September 2018-present
Assistant Professor of Mathematics, Long Island University (LIU Post), September 2012-August 2018
RTG Postdoctoral Fellow, Michigan State University, September 2009-August 2011
Simons Instructor and RTG Postdoctoral Fellow, SUNY Stony Brook, September 2006-August 2009

VISITING POSITIONS

Korea Institute for Advanced Study (Seoul), Visiting Researcher, August 2018
Hausdorff Institute for Mathematics (Bonn, Germany), Trimester Program on Homotopy Theory, Manifolds, and Field Theories, June 2015
Max Planck Institute for Mathematics (Bonn, Germany), Visiting Researcher, January 2012-August 2012
Hausdorff Institute for Mathematics (Bonn, Germany), Junior Trimester Program “Differential Geometry,” September 2011-December 2011

RESEARCH INTERESTS

Algebraic Topology and Differential Geometry

JOURNAL PUBLICATIONS

Modeling bundle-valued forms on the path space with a curved iterated integral, (with Cheyne Glass). *J. Homotopy and Related Structures*, July 2022. [arXiv:2106.15275]
Noncommutative differential K -theory, (with Byungdo Park, Arthur J. Parzygnat, and Augusto Stoffel). *J. Geom. Phys.*, volume 174, April 2022, 104446. [arXiv:2106.12073]
A classification of equivariant gerbe connections, (with Byungdo Park). *Commun. Contemp. Math.*, 21 (2019), no. 2, 40 pp. [arXiv:1709.06003]
An alternate description of equivariant connections. *Differential Geom. Appl.*, 56 (2018), pp. 81-94. [arXiv:1608.01297]
Differential Borel equivariant cohomology via connections. *New York J. Math.*, 23 (2017), pp. 441-487. [arXiv:1602.06921]
Trivializations of differential cocycles. *J. Homotopy and Related Structures*, 10 (2015), no. 2, pp. 303-331. (Online First Nov. 2013). [arXiv:1201.2919]
Harmonic forms on principal bundles. *Asian J. Math.*, 16 (2012), no. 4, pp. 637-660. [arXiv:0810.4578]
String structures and canonical 3-forms. *Pacific J. Math.*, 249 (2011), no. 2, pp. 447-484. [arXiv:0912.2086]

ARTICLES IN CONFERENCE PROCEEDINGS

Elliptic genera and elliptic cohomology. In *Topological Modular Forms*, vol. 201 of *Mathematical Surveys and Monographs*. AMS, 2014. pp. 3-16. ISBN 978-1-4704-1884-7

String structures, 3-forms, and tmf classes. *Oberwolfach Reports* No. 28/2009, edited by G.-M. Greuel, EMS Publishing House, 2009. pp. 1583-1585.

GRANTS

Lead PI - National Science Foundation Noyce Teacher Scholarship Program (NSF 17-541) - *Long Island Mathematics and Teacher Education Scholarship Program* (#1758383), 2018-2023, \$1,450,000.

<http://sites.liu.edu/dredden/> Associated activities include:

STEM Teaching Seminars - organizer, joint with South Huntington and Glen Cove school districts, Fall '19

Noyce Internship Program - joint with Suffolk County Community College, Spring '20, '21, '22

Poster presentations at Noyce Summit conventions - July '19, August '20

SERVICE

SCHOLARLY SERVICE

Ph.D. Thesis reader: Matthew Wheeler (Univ. Pittsburgh), Byungdo Park (CUNY Graduate Center)

Reviewer for National Science Foundation, 2018

Referee for: Algebraic & Geometric Topology; Journal of the Australian Mathematics Society; Journal of Geometry and Physics; Journal of Homotopy and Related Structures; Theory and Applications of Categories; Transactions of the American Mathematical Society

Certificate of Outstanding Contribution in Reviewing from *J. Geometry and Physics* (Elsevier), 2018.

Member of SPPP (Superintendents-College Presidents Partnership) Mathematics working group, 2018-20

UNIVERSITY SERVICE

Faculty coordinator for LIU Post's chapter of Kappa Mu Epsilon (KME) national mathematics honor society, 2013-current (shared with Dr. Peters 2013-14)

Graduate Math Advisor, 2013-18 (shared with Dr. Borde 2013-15)

Math/Physics Tutoring Lab Faculty Supervisor, 2016-18

Member of University Committees:

Liberal Arts & Science Task Force, 2018

Library Committee, 2012-16 (2013-14 chair)

Admissions Committee, 2016-18

Graduate Council, 2013-18

Outcomes Assessment Steering Committee, 2013-16

Math Advisory Group for Teacher Preparation Program, 2015.

Strategic Planning Subcommittee A-15 (Reduce Baccalaureate to 120 credits - Post), Spring 2015.

Faculty-Staff Symposium planning committee, Spring 2013.

TEACHING SERVICE

"Outstanding Educator of the Year 2018" - *Education Update* newspaper

MTH 707 - Supervising graduate theses for Marta Szpak (Spring 2015), Gregory Cyrille (Fall 2020), Jessica Marosz (Fall 2020).

MTH 90 - Supervising undergraduate projects, 2012-current (17 students)

MTH 709/710 - Supervising graduate projects, 2013-current (29 students)

SCALE/HSS - Supervising sections of MTH 3 Valley Stream North HS ('12-'16, 21 total credits), MTH 3 St. Anthony's HS ('14-'15, 2 credits), MTH 7 Eastport South Manor HS ('14-'16, 4 credits), MTH 3 Syosset HS ('19-'20 and '21-'22, 5 total sections), MTH 3 Glen Cove HS ('19).

TEACHING EXPERIENCE

LONG ISLAND UNIVERSITY, LIU POST

MTH 3 – COLLEGE ALGEBRA & TRIGONOMETRY – Fall '12 (2 sections).

MTH 5 – LINEAR MATHEMATICS FOR BUSINESS AND SOCIAL SCIENCES – Spring '13, Fall '17, Spring '18, Fall '18, Fall '21

MTH 6 – CALCULUS FOR BUSINESS AND SOCIAL SCIENCES – Spring '13, Spring '14, Spring '18, Spring '19 (2 sections), Fall '19, Spring '20, Spring '21 (2 sections), Fall '21

MTH 7 – CALCULUS AND ANALYTIC GEOMETRY I – Fall '13 (2 sections), Fall '14 (2 sections), Fall '15, Fall '16

MTH 8 – CALCULUS AND ANALYTIC GEOMETRY II – Spring '15, Spring '16, Spring '17

MTH 9 – CALCULUS AND ANALYTIC GEOMETRY III – Fall '20

MTH 20 – INTRO TO LOGIC, SETS, & MATHEMATICAL STRUCTURES – Fall '19

MTH 51 – PROBABILITY – Fall '20, Fall '21

MTH 71 – ALGEBRAIC STRUCTURES – Spring '21

MTH 73 – FUNDAMENTAL CONCEPTS OF GEOMETRY – Fall '18

MTH 511 – SET THEORY – Fall '12, Fall '13, Fall '15, Fall '17

MTH 512 – MATHEMATICAL LOGIC AND INFORMATION/ERROR-CORRECTING CODES – Spring '13, Spring '15, Spring '17, Spring '19

MTH 514 – EUCLIDEAN GEOMETRY – Spring '14, Spring '16, Spring '20

MTH 521 – LINEAR PROGRAMMING – Fall '16, Fall '18

MTH 568 – MATHEMATICAL STATISTICS – Fall '20, Fall '21

MTH 615 – LINEAR ALGEBRA I – Fall '15, Fall '17, Fall '19

MTH 616 – LINEAR ALGEBRA II – Spring '16, Spring '18, Spring '20

MTH 627 – COMPLEX ANALYSIS – Fall '14, Fall '16, Fall '18

MTH 672 – TOPICS: HOMOLOGICAL ALGEBRA – Spring '18

MTH 672 – TOPICS: PYTHON PROGRAMMING FOR MATHEMATICS – Fall '20

MTH 672 – TOPICS: HIGH SCHOOL MATHEMATICS FROM AN ADVANCED PERSPECTIVE – Fall '21

MICHIGAN STATE UNIVERSITY

MTH 132 – CALCULUS I – Fall '09.

MTH 234 – MULTIVARIABLE CALCULUS – Spring '10.

MTH 309 – LINEAR ALGEBRA – Fall '10, Spring '11.

SUNY STONY BROOK

MAT 123 – INTRODUCTION TO CALCULUS – Fall '06 (2 sections).

MAT 131 – CALCULUS I – Spring '07.

MAT 132 – CALCULUS II – Spring '09.

MAT 205 – CALCULUS III – Spring '08.

MAT 303 – CALCULUS IV WITH APPLICATIONS – Fall '07.

MAT 531 – TOPOLOGY AND GEOMETRY II – Spring '08.

MAT 552 – LIE GROUPS AND LIE ALGEBRAS – Fall '08.

SELECTED PRESENTATIONS

Workshop: String field theory, ... (Gong Show), Simons Center for Geometry & Physics, May 2019.

Topology, Geometry, and Physics Seminar, CUNY Graduate Center, May 2019.

Topology, Geometry, and Physics Seminar, CUNY Graduate Center, December 2018.
Topology Seminar, Korea Institute for Advanced Study (2 talks), August 2018.
Topology Seminar, Purdue University, February 2018.
Topology Seminar, University of Notre Dame, February 2018.
K-Theory Seminar, CUNY Graduate Center (2 talks), February 2018.
Deformation Theory Seminar, University of Pennsylvania, September 2017.
Diff. Geo. and Geo. Analysis session, Union College Math Conference, December 2016.
Geometry, Topology, & Physics Seminar, University of Pittsburgh, June 2016.
Geometry, Topology, & Physics Seminar, University of Pittsburgh, October 2015.
Flavors of Cohomology workshop, University of Pittsburgh (3 talks), June 2015.
K-Theory Seminar, CUNY Graduate Center, April 2015.
Geometry and Physics Seminar, Boston University, March 2015.
K-Theory Seminar, CUNY Graduate Center, November 2014.
Higher Differential Geometry Seminar, Max Planck Institute Bonn, July 2012.
Geometry Seminar, Universität Potsdam, June 2012.
Higher Structures in Geometry and Physics Conference, Göttingen, November 2011.
Junior HTP Seminar, Hausdorff Research Institute, October 2011.
Oberseminar Topologie, Ruhr-Universität Bochum, October 2011.
Topology Seminar, Michigan State, April 2011.
AMS/MAA Joint Mathematics Meeting, New Orleans, January 2011.
Operator Algebras and CFT Workshop, University of Oregon, August 2010.
Topology Seminar, Notre Dame, February 2010.
Geometric Analysis Seminar, Michigan State, September 2009.
Workshop on Strings, Fields, and Topology, Oberwolfach, Germany, June 2009.
AIM SQuaREs workshop in Algebraic Topology and Physics, Palo Alto, CA, June 2009.
Geometry/Topology Seminar, Stony Brook, October 2008.
Topology Seminar, Notre Dame, August 2008.
AIM SQuaREs workshop in Algebraic Topology and Physics, Palo Alto, CA, May 2008.
Topology Seminar, University of Virginia, May 2007.
Topology Seminar, MIT, April 2007.
MIT-Talbot Workshop on Topological Modular Forms, March 2007.
Geometry/Topology Seminar, Stony Brook, November 2006.
Topology Seminar, Northwestern University, April 2006.
Graduate Geometry Seminar, University of Texas Austin, March 2006.
Special Session on Topology and Physics, AMS Sectional Meeting, Notre Dame, IN, April 2006.
Topology Seminar, Notre Dame, October 2005.