

Derek Thompson

Department of Mathematics
Taylor University
Upland, IN 46989
(765) 998-5244
theycallmedt@gmail.com

EDUCATION

Doctorate of Philosophy, Mathematics
Indiana University-Purdue University Indianapolis (IUPUI), Indianapolis, IN May 2013

Master of Arts, Mathematics
Ball State University, Muncie, IN May 2008

Bachelor of Science, Mathematics
Indiana Wesleyan University, Marion, IN May 2006

EMPLOYMENT

Professor, Taylor University 8/23 - Present
Associate Professor, Taylor University 8/18 - 8/23
Assistant Professor, Taylor University 8/14 - 8/18
Assistant Professor, Trine University 5/13 - 5/14
Instructor, Trine University 1/13 - 5/13

GRANTS & AWARDS

2023 Indiana MAA Distinguished Teaching Award
2020-2021 CURM (Center for Undergraduate Research in Mathematics) Grant
2019 Christian Scholars Foundation Grant
2019 Dr. Joe Burnworth Teaching Award
2019 PIC (Preparation for Industrial Careers) Math Grant (deferred)
2018-2019 MAA (Mathematical Association of America) Tensor Women in Mathematics Grant
2017 School of Natural and Applied Sciences (SNAS) Distinguished Lecturer
2016, 2017, 2019, 2021 Women's Giving Circle Grant
2016, 2017, 2020, 2022 Faculty-Mentored Undergraduate Scholarship (FMUS) award
2016, 2017, 2019 Fund for Faculty Scholarship Award
2015, 2016 Teaching & Learning Connection Technology Mini-Grant
2015 Office of Sponsored Programs Mini-Grant
2015 netVUE Career & Calling Mini Grant
2015, 2018, 2019 BCTLE Mini-Grant on Course Redesign
2015 PRMO2015 NSF Travel Grant
2014 MAA Project NExT (New Experiences in Teaching) Fellow (Gold Dot '14)
2012 AMS (American Mathematical Society) Graduate Student Travel Grant
2008 IUPUI University Fellowship

PUBLICATIONS

A name in **bold** was an undergraduate student at that time.

1. P.S. Bourdon, C.S. Kubrusly, T. Le, D. Thompson, *Closed-range posinormal operators and their products*, Linear Algebra and its Applications, 671 (15), pp 38-58 (2023).
2. M. Colgan, D. Rodman, D. Thompson, *Faith-Learning Integration in Mathematics: A Beginner's Guide*, Journal & Proceedings of the ACMS, 2023.
3. S. Kaschner, T. Le, **C. Makdad**, **B. Kempfer**, D. Thompson, **D. Winters**, *Spectra of some weighted composition operators on the Ball*, Acta Scientiarum Mathematicarum, 2023.
4. P. S. Bourdon, D. Thompson, *Posinormal composition operators*, J. Math. Anal. Appl. 518 (2) (2023).
5. **J. Doctor**, **T. Hodges**, **A. McFarland**, D. Thompson, *Spectra of Weighted Composition Operators with Quadratic Symbol*, Concrete Operators, vol. 9, no. 1, 2022, pp. 75-85.
6. D. Rodman, D. Thompson, *A Culture of Problem Solving*, Math Horizons, 29 (1) (2022), 23-25.
7. **C. Holleman**, **T. McClatchey**, D. Thompson, *Binormal, complex symmetric operators*, Linear and Multilinear Algebra, 69, (9) (2021), 1705–1715.
8. **M. Guillaume**, **A. Mishra**, D. Thompson, *Numerical Range of Toeplitz Matrices over Finite Fields*, Proceedings of the ACMS, 22 (May 2020), 151-157.
9. S. Gaier, D. Thompson, *Failure as a Part of the Learning Process: A Unique Opportunity for Christian Higher Education*, submitted.
10. D. Thompson, *Normaloid weighted composition operators on H^2* , J. Math. Anal. Appl. 467 (2) (2018) 1153-1162.
11. M. Fatehi, M. H. Shaabani, D. Thompson, *Quasinormal and hyponormal weighted composition operators on H^2 and A_α^2 with linear fractional compositional symbol*, Complex Analysis and Operator Theory, 12, 1767–1778 (2018).
12. D. Thompson, *Normality properties of weighted composition operators on H^2* , Contemporary Mathematics: Problems and Recent Methods in Operator Theory, 687 (2017) 231-239.
13. W. Johnston and D. Thompson, *The Lebesgue Integral for Undergraduates: An Instructor's Resource Guide*, complement to the book *The Lebesgue Integral for Undergraduates* by W. Johnston, MAA Press, 2017.
14. S. K. Narayan, D. Sievewright, D. Thompson, *Complex symmetric composition operators on H^2* , J. Math. Anal. Appl. 443 (2016) 625-630.
15. C. Cowen, E. Ko, F. Tian, D. Thompson, *Spectra of some weighted composition operators on H^2* , Acta Sci. Math (Szeged) 82 (2016), 221-234.
16. D. Thompson, *Teaching Validity and Soundness of Arguments Using the Board Game: The Resistance*, PRIMUS 25 (6) (2015) 542-552.
17. D. Thompson, *Restrictions of composition operators to $z^k H^2(\mathbb{D})$* , Acta Sci. Math (Szeged) 81 (2015), 309-323.

STUDENT ACHIEVEMENTS

Student Scholarship

For the following items, I served only as research mentor, not co-author. (For papers co-authored with students, please see my own Publications.)

1. **E. Odell, A. Parker**, *Winning Student Engagement Through Board Games in the Classroom*, Ban-
neker Banner.
2. **E. Odell, A. Parker**, *Go Pop! and Go Win!*, Indiana Mathematics Teacher.
3. **A. (née Wentworth) Russell**, *Numerical Range of Strictly Triangular Matrices over Finite Fields*,
Ball State Mathematics Exchange, Vol. 16, No. 1 (Fall 2022).
4. **H. Kaiser, K. O'Malley, G. Weeks**, *Normality properties of composition operators*, accepted, Rose-
Hulman Undergraduate Mathematics Journal.
5. **D. Anderson, J. Crawford**, *Geometric Properties of 3-ellipses and Their Relationship to Numerical
Range*, accepted, Rose-Hulman Undergraduate Mathematics Journal.
6. **M. Guillaume, A. Mishra**, *Numerical Range of 3×3 Truncated Composition Operators*, Ball State
Mathematics Exchange, 13 (1) (Fall 2019), 36-48.
7. **R. Jansen, R. K. Rousseau**, *Complex symmetry of truncated composition operators*, Rose-Hulman
Undergraduate Mathematics Journal, 18 (1) (2017) 44-51.

Student Awards

Outstanding Poster Award, Joint Mathematics Meetings 2019, Maddison Guillaume & Amish Mishra
Outstanding Presentation Award, MathFest 2017, Caleb Holleman
Outstanding Presentation Award, MathFest 2016, Ruth Jansen and Becca Rousseau
1st Place, 2019 MATH Challenge, Jordan Crawford, Drew Anderson, Alexander McFarland
1st Place, 2014 Indiana College Mathematics Competition, Josh Kiers, Claire Spychalla, Daniel Crane

Advising

I began advising students in full capacity in 2017. Since then, my students have:

- received internships at NASA (Ellie Grace Moore, Hannah King) and the National Security Agency
(Gwyn Terrett)
- done work for Lockheed Martin, RT Logic (Ariel Wentworth), Wycliffe Bible Translators (Samuel
Skinner), and other companies
- been accepted to graduate programs at North Carolina State University, University of Iowa, University
of Nebraska-Lincoln, Wake Forest University, Florida Atlantic University, Baylor University, and others
- been accepted to REUs at University of Texas-Tyler (Hannah King), Valparaiso University (Gwyn
Terrett), and Taylor University (many students)
- been camp counselors at MathPath (Jordan Crawford, Luke Wilson, Stevanni McCray)
- taken graduate-level qualifying exams while still at Taylor (Drew Anderson, Jordan Crawford, Amish
Mishra)
- won regional math competitions (Jordan Crawford, Drew Anderson)

MEETINGS ATTENDED

IN-MAA Meetings

Spring 2023, IU Kokomo	Spring 2021, Virtual	Fall 2017, Manchester University
Spring 2017, Earlham College	Spring 2016, Franklin College	Spring 2015, Taylor University
Fall 2014, Trine University	Fall 2013, Univ. Southern IN	Spring 2013, IU East
Fall 2012, Butler University	Spring 2012, Ball State University	Fall 2011, University of Indianapolis
Spring 2011, Indiana Wesleyan	Spring 2010, Franklin College	Fall 2003, Goshen College

AMS Section Meetings

Joint Western & Central Section, University of Hawaii, Honolulu, HI, Spring 2019
Central Section, Indiana University, Bloomington, IN, Spring 2017
Southeastern Section, University of Memphis, Memphis, TN, Spring 2015
Central Section, Washington University, St. Louis, MO, Fall 2013
Southeastern Section, University of Kentucky, Lexington, KY, Spring 2010

MAA MathFest

2016, Columbus, OH	2015, Washington, D.C.
2014, Portland, OR	2013, Hartford, CT

Joint Mathematical Meetings (JMM)

2015, San Antonio, TX	2012, Boston, MA
-----------------------	------------------

ACMS Biennial Conferences

22nd, Indiana Wesleyan University, Marion, IN, 2019
20th, Redeemer University College, Hamilton, Ontario, 2015 (+ pre-conference workshop on faith integration)

Other Meetings Attended

- IWOTA 2021, Chapman University (virtual), Orange, CA, 8/9/21 - 8/11/21.
- Early Career Workshop in Operator Theory & Operator Algebras (virtual), 2/20/21 - 2/21/21.
- CURM Undergraduate Research Workshop (virtual), 5/20/20 - 5/21/20.
- BCTLE Engaging Teaching Today Conference, 2/22/20.
- CCCU Science and Faith Workshop, Taylor University, 8/13/19.
- Indiana Undergraduate Research Conference, Indiana University, 7/24/18.
- IWOTA 2016, Washington University, St. Louis, MO, 7/8/16 - 7/11/16.
- CUR Biennial Conference, University of South Florida, Tampa, FL, 6/26/16 - 6/28/16.
- PRMO Workshop, Memphis, TN, 10/15/15 - 10/16/15.
- Celebration of the Mathematical Mind, IPFW, Fort Wayne, IN, 11/13/15.
- Teaching Mathematics with Technology, UW-LaCrosse, LaCrosse, WI, 7/20/15 - 7/21/15.
- Analysis Symposium, IPFW, Fort Wayne, IN, 11/8/13.
- Gen Con Trade Day for Educators, Indianapolis, IN, 8/14/13.

SERVICE

Memberships

Mathematical Association of America (MAA)
Indiana MAA (IN-MAA) Section NExT
American Mathematical Society (AMS)
Association of Christians in the Mathematical Sciences (ACMS)
Association of Women in Mathematics (AWM)

Professional Service

MAA Network New Faculty Mentor 2019
IN-MAA Nominations Committee 2014-2018
IN-MAA Section NExT Panel Moderator 2017
IN-MAA ICMC Grader 2017
Author of Franklin College Joint Comprehensive Exam 2015
Session moderator at IN-MAA meeting 2015
Co-coordinator of ACMS graduate student workshop 2015
Graduate student panelist, IN-MAA meeting 2010

Peer Review

Journal of Mathematical Analysis and Applications (JMAA), Rose-Hulman Undergraduate Mathematics Journal (RHUMJ), PRIMUS, AMS Contemporary Mathematics series (CONM), Proceedings of the AMS (PAMS), Proceedings of the ACMS, FILOMAT

Current University Service

Department Chair
BCTLE Educational Issues Seminar (EIS) Coordinator
BCTLE Mid-Semester Feedback Coordinator

Past University Service

Academic Policy Committee (APC) 2020-2022
BCTLE Advisor 2017-2021
Zondervan Games Committee (ZGC) 2017-2021
Taylor New Faculty Mentor 2019-2020
Community Connection (English Hall) 2019-2020
Math Club Sponsor 2017-2019
Taylor University Community Life Committee 2016-2019
Taylor-IWU Math Field Day coordinator 2014-2019
Math Competitions Coach 2014-2017, 2019
Game Jam Judge 2016-2019
Science Seminar Coordinator 2019
Department Review Writer 2019
Guest lecture in Systems Game Studies course 2016, 2018

Christian Service

Nursery worker for Mt. Olive United Methodist Church 2014-2017
Youth group leader for Mt. Olive United Methodist Church 2017-2018
Webpage manager for Mt. Olive United Methodist Church 2017-2019
Regular contributor to GeeksUnderGrace.com 2016-present
Board member, Geeks Under Grace January 2020-December 2021

PRESENTATIONS

1. "Alternative grading" Panelist, Indiana MAA Section Meeting, IU Kokomo, 4/1/23.
2. "What My Advisor Taught Me", Indiana MAA Section Meeting, IU Kokomo, 3/31/23.
3. "Scholarship at Taylor", BCTLE Educational Issues Seminar, Taylor University, 3/17/23.
4. "What Makes a Good Exam?", BCTLE Educational Issues Seminar, Taylor University, 10/20/22.
5. "A Plan Gone Awry" (Sabbatical Presentation), Taylor University, 9/29/22.
6. "Posinormal Composition Operators on the Hardy Space," IUPUI Operator Theory Seminar (virtual), 4/13/22.
7. "Teaching an Inherited Course", BCTLE Educational Issues Seminar, Taylor University, 3/17/22.
8. "Spectra of Weighted Composition Operators with Quadratic Symbols," IUPUI Operator Theory Seminar (virtual), 2/2/22.
9. "Spectra of Weighted Composition Operators with Quadratic Symbols," Mathematics Seminar, Ball State University, Muncie, IN, 11/18/21.
10. "Spectra of Weighted Composition Operators with Quadratic Symbols," IWOTA (virtual), Chapman University, Orange, CA, 8/9/21.
11. "Math Major Bingo," Taylor University Math Department Spring Banquet, 4/28/21.
12. "Uniformly Convergent Iteration on the Disk, and Associated Weighted Composition Operators," Early Career Workshop in Operator Theory & Operator Algebras (virtual), 2/21/21.
13. "Numerical Range of Toeplitz Operators over Finite Fields," ACMS 22nd Biennial Conference, Indiana Wesleyan University, Marion, IN, 5/30/19.
14. "Productive Struggle in Higher Education," with Scott Gaier, BCTLE Educational Issues Seminar (EIS), Taylor University, Upland, IN, 4/18/19.
15. "Normaloid Weighted Composition Operators," Spring & Western Joint Section Meeting of the AMS, Honolulu, HI, 3/23/19.
16. "Composition Operators: What If Taylor Series Were Vectors?," Brigham Young University-Hawaii, Laie, HI, 3/19/19.
17. "Board Games in the Classroom" (workshop), Franklin College, Franklin, IN, 2/20/19.
18. "Normaloid Weighted Composition Operators," Operator Theory Seminar, IUPUI, Indianapolis, IN, 1/23/19.
19. "BCTLE Session: Brief, in-class assessments," with Laura Edwards, Taylor University, Upland, IN, 1/3/19.
20. "Technology for Teaching Rocket Session," with Nick Corduan, Jon Denning, and Brandon Magers, Taylor University, Upland, IN, 10/1/18.
21. "Complex Symmetric Operators," SNAS Distinguished Lecture, Taylor University, Upland, IN, 9/18/17.
22. "Complex Symmetric Composition Operators on H^2 ," Special Session on Multivariable Operator Theory and Function Theory, Central Section Meeting of the AMS, Indiana University, Bloomington, IN, 4/1/17.
23. "Top Ten Reasons to Use Plickers," (with Melissa Lindsey), IN-MAA Spring Meeting, Earlham College, Richmond, IN, 3/15/17.
24. "A Journey Towards Specifications Grading," Themed Contributed Paper Session on Formative Assessment Techniques for Undergraduate Math Courses, MathFest 2016, Columbus, OH, 8/5/16.
25. "Teaching the Lebesgue Integral to Undergraduates" (workshop), with Bill Johnston, MathFest 2016, Columbus, OH, 8/4/16 - 8/5/16.
26. "Complex Symmetric Composition Operators on H^2 ," International Workshop on Operator Theory and Applications (IWOTA), Washington University, St. Louis, MO, 7/9/16.

27. "Spectra of some weighted composition operators on H^2 ," Complex Analysis Seminar, University of Toledo, Toledo, OH, 4/28/16.
28. "Spectra of some weighted composition operators on H^2 ," Analysis Seminar, Central Michigan University, Mount Pleasant, MI, 1/29/16.
29. "Teaching Validity and Soundness of Arguments Using the Board Game The Resistance," Celebration of the Mathematical Mind, IPFW, Fort Wayne, IN, 11/13/15.
30. "Spectra of some weighted composition operators on H^2 ," Poster Session, Problems and Recent Methods in Operator Theory (PRMO) conference, University of Memphis, Memphis, TN, 10/13/15-10/14/15.
31. "Teaching Validity and Soundness of Arguments Using the Board Game The Resistance," Themed Contributed Paper Session on Cultivating Critical Thinking through Active Learning in Mathematics, Mathfest 2015, Washington D.C., 8/6/15.
32. "Reading Scripture Logically," Twentieth Biennial Conference of the ACMS, Redeemer University College, Hamilton, Ontario, 5/27/15.
33. "Spectra of some weighted composition operators on H^2 ," Operator Theory Seminar, IUPUI, Indianapolis, IN, 4/1/15.
34. "Demonstrations with Desmos," IN-MAA Spring Meeting, Taylor University, Upland, IN, 3/13/15.
35. "Invariant Subspaces in Infinite Dimensions: Finding the Positive in a Negative Result," Mathematics Colloquium, Indiana Wesleyan University, Marion, IN, 3/12/15.
36. "Technology in Mathematics: What We Gain and What We Lose," SNAS Lecture Series, Taylor University, Upland, IN, 10/27/14.
37. "Writing About Continuity," MAA MathFest 2014, Portland, OR, 8/6/14.
38. "Invariant Subspaces in Infinite Dimensions: Finding the Positive in a Negative Result," invited speaker, Butler University, Indianapolis, IN, 3/19/14.
39. "Spectra of some weighted composition operators on H^2 ," Operator Theory Seminar, IUPUI, Indianapolis, IN, 12/4/13.
40. "Reading Scripture Logically," invited speaker, Indiana Wesleyan University, Marion, IN, 11/26/13.
41. "Writing About Continuity," IN-MAA Fall Meeting, University of Southern Indiana, Evansville, IN, 10/26/13.
42. "Restrictions to Invariant Subspaces of Composition Operators on the Hardy Space of the Disk," Special Session on Operator Theory, Central Section Meeting of the AMS, Washington University, St. Louis, MO, 10/20/13.
43. "Video Games and Calculus," MAA Mathfest 2013, Hartford, CT, 8/2/13.
44. "Restrictions of composition operators to $z^k H^2(\mathbb{D})$," Complex Analysis Seminar, University of Toledo, Toledo, OH, 4/11/13.
45. "Video Games and Calculus," IN-MAA Spring Meeting, IU East, Richmond, IN, 3/23/13.
46. "Board Games and Finite Mathematics," IN-MAA Fall Meeting, Butler University, Indianapolis, IN, 10/27/12.
47. "Restrictions of composition operators to $z^k H^2(\mathbb{D})$," Operator Theory Seminar, IUPUI, Indianapolis, IN, 9/12/12.
48. "Geometry and Algebra of Linear Fractional Transformations on the Riemann Sphere," IN-MAA Spring Meeting, Ball State University, Muncie, IN, 3/24/12.
49. "Restrictions to invariant subspaces of composition operators," Special Session on Operator Theory and Analytic Function Spaces, JMM 2012, Boston, MA, 1/7/12.
50. "Broke By Sundown," IN-MAA Spring Meeting, Indiana Wesleyan University, Marion, IN, 4/8/11.

BCTLE PARTICIPATION

I have attended over 100 BCTLE events. I have also presented at several sessions, both ad-hoc as well as series like Educational Issues Seminar (see Presentations section above). I have also coordinated Mid-Semester Feedback for several other faculty, and served as a New Faculty Mentor.

Regular Events

- Colleagues' College: 2014, 2015, 2016, 2017, 2018, 2019, 2021, 2022
- Educational Issues Seminar: all offered 2014-2015, 2015-2016, 2016-2017, 2017-2018, Spring 2021, 2022

Mid-Semester Feedback

- MAT145 Intro to Functions & Calculus, Fall 2014
- MAT151 Calculus I, Spring 2015
- MAT145 Intro to Functions & Calculus, Fall 2015
- MAT340 Advanced Calculus, Spring 2016

Teaching Squares / Triads

- 2015 with Jon Denning, Tom Nurkkala, Mark Colgan
- 2016 with Diane Dungan, Solomon Abebe, and Connor Angell
- 2017 with Jon Denning, Brandon Magers, Bill Bauson
- 2018 with Barb Bird, Jeremie Riggleman, Rachel Jonker
- 2019 with Laura Edwards, Linda Taylor
- 2019 with Jessica Vanderploeg, Reed Spencer
- 2022 with Kelly Yordy, Donna Downs

Reading Groups

- 2014: *Teaching Naked: How Moving Technology Out of Your College Classroom Will Improve Student Learning*, Jose Antonio Bowen
- 2015: *Faith & Learning*, Patrick Allen and Kenneth Bradley
- 2016: *Augustine's Confessions*
- 2017: *Grit*, Angela Duckworth
- 2020: *Mathematics for Human Flourishing*, Francis Su (via Math Dept.)

Individual Events

Too many to list. Below are some of the more impactful events I have attended.

- "Student Mental Health," Caroline Poland, 10/24/18.
- "Creating classroom spaces for sensitive topics," Steve Messer, 3/14/17
- Workshop on Vocation, Chris Armstrong, OPUS: The Art of Work, Wheaton College, 3/10/16
- "Snapshot Vantage," Jamie Miles, 4/14/16
- "Notes from the spectrum: on writing, teaching, faith, and autism," Daniel Bowman, 12/10/15

INTERESTS

I have written over 200 board game reviews and some video game and music reviews. I am a regular contributor (and former member of the Board of Directors) to the non-profit ministry Geeks Under Grace (geeksundergrace.com) and helped launch their Tabletop section. I also do video game PR for them. I am one of the top *Star Realms* players in the world and occasionally write strategy articles for Megahaulin' (megahaulin.wordpress.com). I write occasional Christian Living articles and devotionals tied to video games for Geeks Under Grace. I enjoy spending time with my wife and young children, Christian metal and hardcore music, medieval fantasy and science fiction literature, and learning new classroom technologies.