

# John H. Clifford

## Curriculum Vitae 2024

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### Education:

- Ph.D. in mathematics 1998; Michigan State University.  
Dissertation: “The Product of a Composition with the Adjoint of a Composition Operator,”  
Advisor: Joel H. Shapiro.
- M.S. in mathematics; Western Washington University, Bellingham, WA.
- B.S. in mathematics and minor in physics; University of Puget Sound, Tacoma, WA.

### Employment:

- Professor, University of Michigan–Dearborn, Fall 2014–Present.
- Associate Professor, University of Michigan–Dearborn, Fall 2006–2014.
- Visiting Scholar, University of Michigan, Winter 2007.
- Assistant Professor, University of Michigan–Dearborn, Fall 2000–2006.

### Publications:

- **Clifford, J.**, Dabkowski, M., Wiggins, A., “The Numerical Range of  $C_{\psi}^*C_{\varphi}$  and  $C_{\varphi}C_{\psi}^*$ ,” *Concrete Operators*, No. 1 (2021) pp. 13-23.
- **Clifford, J.**, Jabbusch, K., Lachance, M., “Preimages of the Numerical Range,” *The American Mathematical Monthly*, Volume 125, No. 1 (2018) pp. 69-74.
- **Clifford, J.**, Lachance, M., “A Generalization of the Bocher-Grace Theorem,” *The Rocky Mountain Journal of Mathematics*, Volume 48, No. 4 (2018) pp. 1069-1076.
- Agarwal, M., **Clifford, J.**, Lachance, M., “Duality and Inscribed Ellipses,” *Computational Methods in Function Theory*, Volume 15, No. 4 (2015) pp. 69-74.
- **Clifford, J.**, Le, T. and Wiggins, A., “Invertible Composition Operators: The Product of a Composition Operator with the Adjoint of a Composition Operator”, *Complex Analysis and Operator Theory* 8 (2014). No. 8, pp. 1699-1706.
- **Clifford, J.**, and Lachance, M., “Quartic Coincidences and the Singular Value Decomposition,” *Mathematics Magazine*, Volume 86, No. 5 (2013) pp. 340-349.
- Rathouz, M., Novak, C., and **Clifford, J.**, “Transforming Shapes Physically and Analytically,” *Mathematics Teacher*, Volume 107, No. 2, (2013) pp. 150-155.
- **Clifford, J.**, Levi, D., Narayan, S., “Commutator of Composition Operators,” *Complex Variables and Elliptic Equations*, Volume 57, Number 6 (2012), 677-686.
- **Clifford, J.**, Dabkowski, M., “Singular Values and Schmidt Pairs of Composition Operator,” *Journal of Mathematical Analysis and Applications* Volume 305, Number 1, (2005), 183-196.
- **Clifford, J.**, James, D., Lachance, M., Remski, J., “A Constructive Approach to Singular Value Decomposition and Symmetric Schur Factorization,” *American Mathematical Monthly*, Volume 112, Number 4, (2005), 358-363.
- **Clifford, J.**, Zheng, D., “Composition Operators on the Bergman Spaces,” *Chinese Annals of Mathematics*, Volume 24B, Number 4, (2003), 433-448.
- **Clifford, J.**, Zheng, D., “Composition Operators on the Hardy Space,” *Indiana University Mathematics Journal*, Volume 48, Number 4, (1999), 1585-1616.

### Invited Talks:

- “The Numerical Range of the Comp Op,” Analysis Seminar, University of Toledo, Feb. 2020.
- “The Numerical Range of the Product of a Composition Operator with the Adjoint of a Composition Operator,” AMS Southeastern Sectional Meeting, Nashville, TN., April 2018.
- “The Norm of a Composition Operator,” Analysis Seminar, UM-Dearborn, 2018.
- “The Numerical Range of the Comp Op,” JMM, AMS Special Session, Seattle, WA., 2016.
- “Isometric Products: The Product of a Comp Op with the Adjoint of a Comp Op,” Operator Theory Seminar at IUPUI, Indianapolis, IN., 2014.

#### M.S. Students:

- Barnes, David, *Geometry of Polynomials*, MS in Applied and Computational Mathematics, May 2010, Currently Chief Council of the American Axle & Manufacturing, Inc.
- Michael Nagy, *Wavelets: Local Changes without Global Influence* MS in Applied and Computational Mathematics, May 2006.

#### Undergraduate Research Projects:

- **Timothy Batt**; Summer 2021 REU: SURE Grant from UM-Dearborn. Talk: *Numerical Range and Spectrum of a Composition Operator*, Summer Michigan Undergraduate Mathematics Conference, Michigan State University, MI. 2021, SURE, University of Michigan–Dearborn, September 2021. Video Presentation: Young Mathematician Conference(YMC), Columbus, OH. Poster: Joint Mathematics Meeting. Funded by an OSRP student travel grant, January 2019.
- **Fatme Hourani**; Summer 2018 REU. Talk: *Numerical Range of a Composition Operator*, Summer Michigan Undergraduate Mathematics Conference, Michigan State University, MI. 2018 and SURE, UM–Dearborn, 2018. Poster: Young Mathematician Conference(YMC), Columbus, OH. Funded by YMC student travel grant, 2018 and the Joint Mathematics Meeting. Funded by an OSRP student travel grant, January 2019.
- **Amanda Caldwell** and **Timothy Holman**; Summer 2017 REU and Winter 2018 independent study. Talk: *Linear Fractional Transformations of the Bidisc*, Summer Michigan Undergraduate Mathematics Conference, Grand Valley, MI, 2017. Poster: Young Mathematician Conference(YMC), Columbus, OH. Funded by YMC student travel grant, 2017 and the Joint Mathematics Meeting. Funded by an OSRP student travel grant, January 2018. Talk: *Square roots of composition operators*, Meeting of the Minds, Oakland University, 2018.
- **Joseph Noles** and **Diego Vela**; Talk: *The critical points of a rhombus*, Michigan Undergraduate Mathematics Conference, Grand Valley State University, October 2010.
- **Matthew Schanz**; Student Summer Research Grant from the UM–Dearborn. Funded \$500 for travel and \$2500 for research, summer 2008. Talk: *Generalization of Marden’s Theorem*, Michigan Undergraduate Mathematics Conference, UM–Dearborn, October 2008.
- **Gregory Sulisz**; Student Summer Research Grant from the UM–Dearborn. Funded \$500 for travel and \$2500 for research, summer 2005. Talks: *Finite Approximations to Composition Operators and their Spectra*, Faculty Seminar, UM–Dearborn, 2005, and Michigan Undergraduate Mathematics Conference, UM–Flint, 2005.
- **Michael Dabkowski**; Student Summer Research Grant from the UM–Dearborn (2003). Talks: *Singular Values of Composition Operators*, Faculty Seminar, UM–Dearborn, 2003; Michigan Undergraduate Mathematics Conference, Grand Valley State University, 2003; and Meeting of the Minds, UM–Flint, 2004. Paper: *Singular Values and Schmidt Pairs of Composition Operator*, J. Math. Anal. Appl. 305 (2005) 183-196.

#### Teaching:

- **Courses taught:** Discrete Math in Computer Eng; Calculus I and II; Multivariable Calculus; Differential Equations; Linear Algebra; Introduction to Proofs; Survey of Geometry, Computing with Mathematica ; Abstract Algebra; Advanced Calculus I, II; Complex Variables; Fourier Analysis and Boundary Value Problems; Introduction to Wavelets; Topology; Capstone.