



Curriculum Vitae

December 2025

Instructor: Mehmet Celik

Accademic Department: Mathematics

University Address: Department of Mathematics

Frank Young Education North, 111, PO Box 3011

East Texas A&M University

Commerce, TX 75429-3011

University Email Address: Mehmet.Celik@etamu.edu

EDUCATION

Texas A&M University, College Station, TX Ph.D. in Mathematics, May 2008.

Advisor: Emil Straube.

Primary research area:

Complex Analysis in Several Variables; Secondary research area: Partial Differential Equations and Operator Theory.

Research interests: Compactness and Regularity of the $\bar{\partial}$ -Neumann Problem; Hankel Operators; Toeplitz Operators; Hilbert-Schmidt operators.

Additional research interest: Mathematics Education.

WORK EXPERIENCE

08/2024 – present Professor of Mathematics, East Texas A&M University (old name: Texas A&M University-Commerce), Commerce, TX.

08/2018 – 08/2024 Associate Professor of Mathematics, Texas A&M Un.-Commerce, TX.

08/2015 – 08/2018 Assistant Professor of Mathematics, Texas A&M Un.-Commerce, TX.

08/2010 – 08/2015 Assistant Professor of Mathematics, UNT - Dallas, TX.

08/2008 – 08/2010 Assistant Professor of Mathematics, Un. of Arkansas-Fort Smith, AR.

06/2008 – 08/2008 Assistant Research Scientist, Texas A&M Un., College Station, TX.

PUBLICATIONS

Peer-Reviewed Journal Articles in Mathematics

1. **Çelik, M.**, Duguin, M., Guo, A., Juo, J., Spinelli, K., Zeytuncu, Y. E., & Zhu, Z. (2025). *Exploring a Geometric Conjecture, Some Properties of Blaschke Products, and the Geometry of Curves Formed by Them*. Computational Methods and Function Theory (2025). doi:10.1007/s40315-025-00579-2.
2. **Çelik, M.**, Duane-Tessier, L., Rodriguez, A. M., Rodriguez, D., & Shaw, A. (2024). *Area Differences under Analytic Maps and Operators*. Czechoslovak Mathematical Journal. doi:10.21136/CMJ.2024.0023-24.
3. **Çelik, M.**, Şahutoğlu, S., & Straube, E. J. (2023). *A Sufficient Condition for Compactness of Hankel Operator*. Journal of Operator Theory, 89(1), 101–111. doi: 10.7900/jot.2021apr04.2334.
4. Bambico, H., **Çelik, M.**, Gross, S., & Hall, F. (2022). *Generalization of the Excess Area and its Geometric Interpretation*. New York Journal of Mathematics, 28, 1230–1255.
5. **Çelik, M.**, Şahutoğlu, S., & Straube, E. J. (2020). *Compactness of Hankel Operators with Continuous Symbols on Convex Domains*. Houston Journal of Mathematics, 46(4), 991–1002.
6. **Çelik, M.**, Şahutoğlu, S., & Straube, E. J. (2020). *Convex Domains, Hankel Operators, and Maximal Estimates*. Proceedings of the American Mathematical Society, 148(2), 751–764.
7. Clos, T. G., **Çelik, M.**, & Şahutoğlu, S. (2018). *Compactness of Hankel Operators with Symbols Continuous on the Closure of Pseudoconvex Domains*. Integral Equations and Operator Theory, no. 6, Article 71, 14 pp.
8. **Çelik, M.** & Zeytuncu, Y. E. (2017). *Analysis on the Intersection of Pseudoconvex Domains*. In *Analysis and Geometry in Several Complex Variables* (pp. 51–64), Contemp. Math., 681. Amer. Math. Soc.
9. **Çelik, M.** & Zeytuncu, Y. E. (2017). *Hilbert–Schmidt Hankel Operators with Antiholomorphic Symbols on Complete Pseudoconvex Reinhardt Domains*. Czechoslovak Mathematical Journal, 67(142)(1), 207–217.
10. **Çelik, M.** & Zeytuncu, Y. E. (2016). *Obstructions for Compactness of Hankel Operators: Compactness Multipliers*. Illinois Journal of Mathematics, 60(2), 563–585.
11. **Çelik, M.** & Zeytuncu, Y. E. (2016). *Nilpotent Toeplitz Operators on Reinhardt Domains*. Rocky Mountain Journal of Mathematics, 46(5), 1395–1404.
12. **Çelik, M.** & Şahutoğlu, S. (2014). *Compactness of the $\bar{\partial}$ -Neumann Operator and Commutators of the Bergman Projection with Continuous Functions*. Journal of Mathematical Analysis and Applications, 409(1), 393–398.
13. **Çelik, M.** & Şahutoğlu, S. (2012). *On Compactness of the $\bar{\partial}$ -Neumann Problem and Hankel Operators*. Proceedings of the American Mathematical Society, 140(1), 153–159.
14. **Çelik, M.** & Straube, E. J. (2009). *Observations Regarding Compactness in the $\bar{\partial}$ -Neumann Problem*. Complex Variables and Elliptic Equations, 54(3–4), 173–186.

Peer-Reviewed Journal Articles in Mathematics Education

1. Wang, T., Çelik, M., & Webster, P. (2023). *Use Longitudinal Data and Moving Average to Illustrate Effectiveness of Supplemental Instruction*. *PRIMUS*, 33(1). doi: 10.1080/10511970.2023.2214930.
2. Çelik, M. & Shaqlaih, A. (2017). *Fostering Students' Preparation and Achievement in Upper Level Mathematics Courses*. *International Journal for Mathematics Teaching and Learning*, 18(3), 383–397.
3. Shaqlaih, A. & Çelik, M. (2013). *Students' Preferences in Mathematics Lab*. *American Journal of Educational Studies*, 6(2), 17–35.

Peer-Reviewed Conference Proceedings in Math Education

1. Dibbs, R. A. & Çelik, M. (2025). *STEM majors' perceived value of an introductory calculus course-based research experience*. *Proceedings from The Learning and Teaching of Calculus Across Disciplines* 2, pp. 132-137.
2. Dibbs, R. A., & Çelik, M. (2024). *Investigating students' worldviews of complex multiplication and derivatives*. In P. Drijvers, C. Csapodi, H. Palmér, K. Gosztonyi, & E. Kónya (Eds.), *Proceedings of the Thirteenth Congress of the European Society for Research in Mathematics Education (CERME13)*. Alfréd Rényi Institute of Mathematics and ERME.

Doctoral Dissertation

Çelik, M. (2008). *Contributions to the Compactness Theory of the $\bar{\partial}$ -Neumann Operator*. Thesis (Ph.D.)–Texas A&M University, 79 pp. ISBN: 978-0549-72143-7, ProQuest LLC.

AWARDS, SERVICE, AND GRANTS

Awards & Honors

2023 – Paul W. Barrus Distinguished Faculty Award for Teaching, East Texas A&M University Faculty Senate.

2022 – Texas Section of the Mathematical Association of America Distinguished College and University Teaching of Mathematics Award.

2020 – Recognized by the College of Innovation & Design, East Texas A&M University, with a trophy honoring multiple years of service as a Signature Course instructor.

2012 – Liberal Arts and Sciences Faculty Teaching Award, University of North Texas at Dallas.

Professional Service

Review Panelist, National Science Foundation (NSF), Division of Mathematical Sciences, 2024.

Representative, MAA Texas Section to the MAA Congress, July 2022 – June 2026.

Grants & Funding

Co-Principal Investigator, National Science Foundation, REU Site: *Theoretical and Application-Driven Mathematics* (DMS-2243991), 2023–2026, \$385,387.

(with Padmapani Seneviratne) National Research Experience for Undergraduates Program (NREUP), administered by the Mathematical Association of America (MAA) and funded by the NSF, 2018 & 2019, total funding \$54,500.

Research stipend, L3 Technologies (L3 Harris), Greenville, TX, 2016, \$5,000.

STUDENTS MENTORED (UNDERGRAD / GRAD)

TADM-REU at Texas A&M–Commerce: Mentor during Summer 2023 (4 students), Summer 2024 (3 students), & Summer 2025 (4 students).

Polymath Jr. Program: Mentor in Summer 2022 (with Kamryn Spinelli and Yunus Zeytuncu) & Summer 2023 (with Kamryn Spinelli, Yunus Zeytuncu, and Zhenghui Huo).

Undergraduate Honors Theses: Jonathan Enright (expected May 2026); Nicholas Arsenault (graduated May 2020; currently a Ph.D. candidate in Mathematics at the University of Kentucky).

Master’s Students at ETAMU: Bjorn Strottman (expected graduation May 2026), Scott Payne (May 2025), Rajesh Katuri (May 2025), Rebecca Wilburn (Aug. 2024), Blair Elliott (2022), Ever Rodriguez (2020), Mehmet Bozkurt (2019), Mehmet Cellik (2018), Margarita Morales (2018), Ismail Yildirim (2017).

MAA National REU Program Students: Micalyn Rowe (2018; currently a Ph.D. candidate in Astrophysics at TAMU), Cristo Sanchez (2018; currently a Ph.D. candidate in Astronomy at NMSU); Haley Bambico (2021), Sarah Gross (2021), & Frank Hall (2021).

PRESENTATIONS

(2025). *Exploring Excess Image Area Growth: From Holomorphic Functions to Toeplitz Operators*. Special session "Looking at Complex Analysis and Geometry through the Lenses of Research, History, and Pedagogy" at the MAA MathFest, Sacramento, CA, USA.

(2025). (with Rebecca Dibbs) *The Impact of Emphasizing Geometry and Visualization on Understanding Complex Analysis*. AMS Special Session "Take the i Road: Welcoming Complex Numbers and Viewpoints Across the Undergraduate Curriculum", 2025 Joint Mathematics Meetings, Seattle, WA, USA.

(2025). *Area Difference under Analytic Maps and Operators*. Complex Analysis and Operator Theory Seminar (online), Department of Mathematics, University of Toledo, Ohio, USA.

(2024). (with Rebecca Dibbs) *Student perceptions of a flipped complex analysis class and complex variables*. Themed Contributed Paper Session sponsored by SIGMAA for RUME at the (National) MAA MathFest, Indianapolis, IN, USA.

(2023). *On compactness property of Hankel operators*. AMS Special Session on PDEs and Complex Variables, 2023 Joint Mathematics Meetings, Boston, MA, USA.

(2023). *Lecture presentation*. Annual Meeting of the Texas Section of the MAA, Tarleton State University, Stephenville, TX, USA.

- (2023). (with Rebecca Dibbs) *Investigating students' worldviews of complex multiplication and derivatives in a flipped classroom*. Themed Contributed Paper Session sponsored by SIGMAA for RUME at the (National) MAA MathFest, Tampa, FL, USA.
- (2023). *Complex Numbers in Daily Life, Science, and Mathematics*. Math Department Colloquium, Texas A&M University–Commerce, Commerce, TX, USA.
- (2022). *Generalization of the excess area and its geometric interpretation*. Math Department Colloquium, Texas A&M University–Commerce, Commerce, TX, USA.
- (2021). *On Compactness of Hankel Operators*. Analysis Seminar (online), Bilkent University, Türkiye.
- (2019). *On Compactness of Hankel Operators: Symbol functions & Compactness Multipliers*. Analysis and Geometry in Several Complex Variables III, Texas A&M University at Qatar, Doha, Qatar.
- (2018). *Compactness of Hankel operators with symbols continuous on the closure of pseudoconvex domains*. American Mathematical Society Special Session: Partial Differential Equations in Several Complex Variables, University of Arkansas, Fayetteville, AR, USA.
- (2017). *Obstructions for Compactness of Hankel Operators: Compactness Multipliers*. American Mathematical Society Special Session: Several Complex Variables, University of California, Riverside, CA, USA.
- (2017). *Jack of All Trades*. Math Club, Department of Mathematics, Texas A&M University–Commerce, Commerce, TX, USA.
- (2017). *Complex Analysis and a Research Problem for students*. Math Department Colloquium, Texas A&M University–Commerce, Commerce, TX, USA.
- (2016). *Cauchy-Riemann Equations*. Millican Colloquium, University of North Texas, Denton, TX, USA.
- (2016). *Hilbert-Schmidt Hankel Operators with Anti-Holomorphic Symbols on Complete Pseudoconvex Reinhardt Domains*. Several Complex Variables Seminar, Department of Mathematics, Texas A&M University, College Station, TX, USA.
- (2016). *A Formula Sheet in Math Exams: Issues and Remarks*. 96th Annual Meeting of the Texas Section of the MAA, Stephen F. Austin State University, Nacogdoches, TX, USA.
- (2016). *Practical Issues in Fostering Teaching Excellence*. Learning Community organized by the Center for Faculty Excellence and Innovation, Texas A&M University–Commerce, Commerce, TX, USA.
- (2015). *Analysis on the intersection of pseudoconvex domains*. Workshop on Several Complex Variables and CR-Geometry, Erwin Schrödinger International Institute for Mathematics and Physics, Vienna, Austria.
- (2015). *Nilpotent Toeplitz Operators on Reinhardt Domains*. AMS Special Session: Complex Analysis in Several Complex Variables and its Applications, Michigan State University, East Lansing, MI, USA.
- (2015). *Inhomogeneous Cauchy-Riemann Equations in \mathbb{C} and in \mathbb{C}^n* . Complex Analysis Seminar, University of Toledo, Ohio, USA.

- (2015). (with A. Shaqlaih) *Fostering Students' Preparation and Achievement in Upper Level Math Courses*. 18th Annual Legacy of R. L. Moore – Inquiry-Based Learning Conference, Austin, TX, USA.
- (2015). *Imaginary Numbers in Everyday Life*. Math Colloquium, University of Michigan–Dearborn, MI, USA.
- (2015). *From Biholomorphic Maps to the $\bar{\partial}$ -Neumann Problem and related operators*. Department of Mathematics, Texas A&M University–Commerce, Commerce, TX, USA.
- (2014). *Using Math to Resolve a Game*. Student/Faculty Math Colloquium, University of North Texas at Dallas, TX, USA.
- (2014). *Hankel Operators with Anti-holomorphic Symbols on Complete Pseudoconvex Reinhardt Domains*. 30th Southeastern Analysis Meeting, Clemson University, Clemson, SC, USA.
- (2013). *Compactness of the $\bar{\partial}$ -Neumann Operator and Commutator Operator on forms*. Joint Mathematics Meetings, AMS Special Session on Several Complex Variables Techniques in Operator Theory, San Diego, CA, USA.
- (2012). *Compactness of the $\bar{\partial}$ -Neumann operator and of commutators of the Bergman projection with continuous functions*. Complex Analysis Seminar, Department of Mathematics and Statistics, University of Toledo, Toledo, OH, USA.
- (2012). *Compactness of the $\bar{\partial}$ -Neumann Operator and Commutator Operator on forms*. AMS Special Session: Interplay between Geometry and PDEs in Several Complex Variables, Lawrence, KS, USA.
- (2011). *Compactness of the $\bar{\partial}$ -Neumann problem and Hankel Operators*. Complex Analysis Seminar, Department of Mathematics and Statistics, University of Toledo, Toledo, OH, USA.
- (2010). *On compactness of the $\bar{\partial}$ -Neumann problem and Hankel operators*. Tenth Prairie Analysis Seminar, University of Kansas, Lawrence, KS, USA.
- (2010). *Compactness of the $\bar{\partial}$ -Neumann Problem and Hankel Operators*. Program on Spectrum of the $\bar{\partial}$ -Neumann Operator and Hankel Operators, CIRM – Centre Internationale de Rencontres Mathématiques, Luminy, Marseille, France.
- (2009). *Independence of Sub-elliptic Estimates of the $\bar{\partial}$ -Neumann Operator from a Metric*. Workshop on the $\bar{\partial}$ -Neumann Problem, Erwin Schrödinger Institute for Mathematical Physics, Vienna, Austria.
- (2009). *Observations on some properties of the $\bar{\partial}$ -Neumann Operator*. Research Seminars in Analysis, Department of Mathematical Sciences, University of Arkansas, Fayetteville, AR, USA.
- (2009). *Complex Analysis Beyond One Dimension*. Mathematics Colloquium, Department of Mathematical Sciences, University of Arkansas, Fayetteville, AR, USA.
- (2008). *Inequalities in Analysis*. Student/Faculty Colloquium Series, Department of Mathematics, University of Arkansas–Fort Smith, Fort Smith, AR, USA.
- (2007). *Ideal of Compactness Multipliers*. 2007 Spring AMS Central Section Meeting No. 1025, Oxford, OH, USA.
- (2007). *Solving the CR equations through the $\bar{\partial}$ -Neumann Problem*. Mathematics Colloquia, Texas A&M University–Commerce, Commerce, TX, USA.

(2006). *Ideal of Compactness Multipliers*. SCV Seminar, Department of Mathematics, Texas A&M University, College Station, TX, USA.

(2006). *Invariance of compactness and sub-elliptic estimates for smooth metrics*. SCV Seminar, Department of Mathematics, Texas A&M University, College Station, TX, USA.

(2006). *The Hopf Lemma*. SCV Seminar, Department of Mathematics, Texas A&M University, College Station, TX, USA.