



Curriculum Vitae

August 2025

Instructor: Mehmet Celik

Accademic Department: Mathematics

University Address: Department of Mathematics

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Education

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

1. Peer-Reviewed Journal Articles in Mathematics

- 1.1. **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.

- 1.2. **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.
- 1.3. **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.
- 1.4. 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.
- 1.5. **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.
- 1.6. **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.
- 1.7. 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.
- 1.8. **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.
- 1.9. **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.
- 1.10. **Çelik, M.** & Zeytuncu, Y. E. (2016). *Obstructions for Compactness of Hankel Operators: Compactness Multipliers*. *Illinois Journal of Mathematics*, 60(2), 563–585.
- 1.11. **Çelik, M.** & Zeytuncu, Y. E. (2016). *Nilpotent Toeplitz Operators on Reinhardt Domains*. *Rocky Mountain Journal of Mathematics*, 46(5), 1395–1404.
- 1.12. **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.
- 1.13. **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.
- 1.14. **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.
2. **Peer-Reviewed Journal Articles in Mathematics Education**
 - 2.1. 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.
 - 2.2. **Çelik, M.** & Şaqlaih, A. (2017). *Fostering Students’ Preparation and Achievement in Upper Level Mathematics Courses*. *International Journal for Mathematics Teaching and Learning*, 18(3), 383–397.
 - 2.3. Şaqlaih, A. & **Çelik, M.** (2013). *Students’ Preferences in Mathematics Lab*. *American Journal of Educational Studies*, 6(2), 17–35.
3. **Peer-Reviewed Conference Proceedings**

- 3.1. 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.

4. 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 (Undergraduate / Graduate)

- **TADM-REU at Texas A&M–Commerce:** Mentor during Summer 2023 (4 students), Summer 2024 (3 students), & Summer 2025 (5 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 TAMUC:** Scott Payne (expected 2025), Rajesh Katuri (expected 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; currently a master's candidate in both Physics and Mathematics at Texas A&M University–Commerce).

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 Bi-holomorphic 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.