

Dr. Debendra P. Banjade

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Education

- 2014: **Ph.D. in Mathematics** The University of Alabama, Tuscaloosa, AL
Thesis Advisor: Professor Tavan T. Trent
Thesis Title: Wolff's Ideal Problem in the Multiplier Algebra on Dirichlet Space
(Outstanding Research by a Doctoral Candidate 2013-2014)
- 2010: **M.A. in Mathematics** The University of Alabama, Tuscaloosa, AL
- 2006: **M.A. in Mathematics** Tribhuvan University, Kathmandu, Nepal

Employment

- 2020 – Present: **Associate Professor of Mathematics**
Coastal Carolina University, Conway, SC
- 2014 – 2020 : **Assistant Professor of Mathematics**
Coastal Carolina University, Conway, SC
- 2009 – 2014: **Graduate Teaching Assistant**
The University of Alabama, Tuscaloosa, AL
- 2006 – 2009: **Lecturer**
Xavier International College, Kathmandu, Nepal
- 2002 – 2004: **High School Mathematics Teacher**
Kingdom Star High School, Lalitpur, Nepal

Courses Taught

Coastal Carolina University: Numerical Analysis, Numerical Calculus, Complex Variables, Elementary Differential Equations, Modeling for Scientists I & II, Calculus I and II, Basic Concepts of Contemporary Mathematics, Business Calculus, Trigonometry, College Algebra

The University of Alabama: Introduction to Linear Algebra, Applied Differential Equations, Pre-Calculus Algebra and Trigonometry, Calculus and Applications, Finite Mathematics

Xavier International College: Calculus for Higher Secondary Level I & II, Business Mathematics I & II

Research Interests

Complex Analysis, Operator Theory, Harmonic Analysis, and Mathematics Education

Research Publications

Mathematical Analysis:

- Generalization of Ideal Theorem on $H_{K(\mathbb{B})}^{\infty}(\mathbb{D})$, **D. P. Banjade and M. Ephrem**, *Operators and Matrices*, Vol. 16, Number 1 (2022), 141-150
- On Labeled Graph C^* - Algebras, **D. P. Banjade and Menassie Ephrem**, *Rocky Mountain Journal of Mathematics*, Vol. 50, Number 3 (2020), 863-870
- Wolff's Ideal Theorem on Q_p Spaces, **D. P. Banjade**, *Rocky Mountain Journal of Mathematics*, Volume 49, No. 7 (2019), 2121 – 2133
- Estimates for the Corona Theorem on $H_{\mathbb{I}}^{\infty}(\mathbb{D})$, **D. P. Banjade**, *Operators and Matrices*, Volume 11, No. 3 (2017), 725 –734
- On a Generalization of Wolff's Ideal Theorem for Certain Subalgebras of $H^{\infty}(\mathbb{D})$, **D. P. Banjade, M. Ephrem, A. Incognito, and M. Wilkerson**, *Rocky Mountain Journal of Mathematics*, Volume 47, No. 8 (2017), 2535–2544
- A Generalized Wolff's Ideal Theorem on Certain Subalgebras of $H^{\infty}(\mathbb{D})$, **D. P. Banjade, C. Holloway, and T. T. Trent**, *Integral Equation and Operator Theory*, Vol. 83, Issue 4 (2015), 483–496
- Wolff's Problem of Ideals in the Multiplier Algebra on Weighted Dirichlet Spaces, **D. P. Banjade and T. T. Trent**, *Houston Journal of Mathematics*, Vol. 41, No. 3 (2015), 915–932
- Wolff's Problem of Ideals in the Multiplier Algebra on Dirichlet Space, **D. P. Banjade and T. T. Trent**, *Complex Analysis and Operator Theory*, Vol. 8, Issue 8 (2014), 11707–1721
- Ideal Problem in the Multiplier Algebra on Dirichlet Spaces, **D. P. Banjade and H. Kwon** *In Preparation*

Undergraduate Reserach:

- Nevanlinna Pick Interpolation Theorem on Certain Subalgebras of $H^{\infty}(\mathbb{D})$, **D. P. Banjade and Jeremiah Dunivin**, *Minnesota Journal of Undergraduate Mathematics*, To Appear, Accepted on 05/01/2021
- Characterization of Sets K for Which $H^{\infty}(\mathbb{D})$ is an Algebra, **D. P. Banjade and Jeremiah Dunivin**, *Submitted*
- Finite Dimensional Labeled Graph Algebras, **D. P. Banjade, Menassie Ephrem, and Dashiell Stevanovich**, *Submitted*

Mathematics Education:

- What are Possible Sources of Common and Persistent Student Errors in Algebra and Calculus? **K. Nepal, K. Pokharel, D. Bashyal, D. P. Banjade, and M. Lamichhane**, *Mathematics Education Forum Chitwan*, 6(6) (2021), 8-29

Research Experience

Conference, Seminar, and Workshop Talks:

- (December, 2021) Invited Talk, Central Department of Mathematics
Tribhuvan University, Kathmandu, Nepal
Title of the talk: *Operator Theory and Its Recent Applications*
(Invited Speaker)
- (June, 2020) Analysis Seminar, Central Department of Mathematics
Tribhuvan University, Kathmandu, Nepal
Title of the talk: *Interpolation on Certain Subalgebras of Bounded Analytic Functions*
(Invited Speaker)
- (May, 2020) NMS 42nd Anniversary
Tribhuvan University, Kathmandu, Nepal
Title of the talk: *Corona Problem and Its Connection to Operator Theory and Function Theory*
(Plenary Speaker)
- (June, 2019) Second International Conference on Applications of Mathematics to Nonlinear Sciences
Pokhara, Nepal
Title of the talk: *Wolff's Ideal Theorem on Banach Algebra $H^\infty(\mathbb{D}) \cap Q_p$*
(Chaired a Session)
- (March, 2019) Southeastern Analysis Meeting
The University of Alabama, Tuscaloosa, AL
Title of the talk: *Interpolation on Certain Subalgebras of Bounded Analytic Functions*
- (March, 2018) Southeastern Analysis Meeting
Georgia Institute of Technology, Atlanta, GA
Title of the talk: *On a Generalization of Wolff's Ideal Theorem for Certain Subalgebras of $H^\infty(\mathbb{D})$*
(Chaired a Session)
- (January, 2017) Joint Mathematics Meetings 2017
Hyatt Regency Atlanta, Atlanta, GA
Title of the talk: *Corona Theorem on $H^\infty_{\mathbb{T}}(\mathbb{D})$*
- (March, 2016) Southeastern Analysis Meeting
University of South Florida, Tampa, FL
Title of the talk: *Estimates for the Corona Theorem on Certain Sub-Algebras of Bounded Analytic Functions*
- (January, 2015) Joint Mathematics Meetings 2015
Henry B. Gonzalez Convention Center, San Antonio, TX
Title of the talk: *Generalized Corona Theorem and Wolff's Ideal Theorem*
- (January, 2014) Joint Mathematics Meetings 2014
Baltimore Convention Center, Baltimore, MD
Title of the talk: *Wolff's Ideal Theorem on Q_p Spaces*
- (April 2013) Analysis Seminar 2013
Georgia Institute of Technology, Atlanta, GA
Title of the talk: *Wolff's Ideal Problem in the Multiplier Algebra on Weighted Dirichlet Spaces*
- (March, 2013) Southeastern Analysis Meeting 2013
Virginia Tech, Blacksburg, VA
Title of the talk: *Wolff's Ideal Problem in the Multiplier Algebra on Dirichlet Space*

- (June, 2012) Workshop on the Corona Problem
Fields Institute, Toronto, Canada
Title of the talk: *The Sufficient Conditions for the Wolff's Corona Problem*

Mentoring Students in MATH 490, "Seminar in Mathematics":

- (Fall 2020) Trini Cole, Presented her final talk and poster about "Lagrange Interpolation"
- (Fall 2019) Jeremiah Dunivin, Presented his final talk and poster about "Nevanlinna-Pick Interpolation"
- (Fall 2018) Hannah Harrelson, Presented her final talk and a poster about "Newton's Law of Cooling"
- (Fall 2018) Adrian Avalos, Presented his final talk and a poster about "Harmonic Functions and Their Real World Applications"
- (Fall 2017) Dominique Forbes, Presented her final talk and a poster about "Evaluating Iodide concentration and its effect on Neurological Development"
- (Fall 2017) Jesse Shelley, Presented his final talk and a poster about "Estimating the time of death of a body with respect to the cooling rate"
- (Fall 2015) Kevin McCarey, Presented his final talk and a poster about "A Look into the World of Möbius Transformations"

Other Talks at Coastal Carolina University:

- (October 2017, 2018, 2019) UNIV 110S (The First-Year Experience) "One Talk, One Time", Presented an hour long talk "Fibonacci Sequence and the Golden Ratio"
- (November 2016, November 2015) UNIV 110S (The First-Year Experience) "One Talk, One Time", Presented an hour long talk "Mathematical Induction"

Miscellaneous Talks and Conferences:

- (May, 2018) Workshop on Collaborative Research in Mathematical Sciences, Mercer University, Macon, GA
- (March, 2017) Southeastern Analysis Meeting, University of Tennessee, Knoxville, TN
- (March, 2015) MAA Southeastern Sectional Meetings, UNC-Wilmington, Wilmington, NC
- (October, 2013) Virginia Operator Theory and Complex Analysis Meeting, University of Virginia, Charlottesville, VA
- (May, 2013) Hilbert Function Spaces, Palazzo Feltrinelli, Gargnano, Italy
- (January, 2013) Joint Mathematics Meetings, San Diego Convention Center, San Diego, CA
- (August, 2012) Recent Advances in Harmonic Analysis and Spectral Theory, Texas A& M University, TX
- (August 2012) Presented an hour long talk "Maximal Ideals and the Corona Problem" in the Graduate Student Seminar, The University of Alabama, Tuscaloosa, AL

Honors and Awards

- **PEG: Professional Enhancement Grant**, Mathematical Modeling on Interdisciplinary Studies (Award \$500, jointly with Dr. Dahal)
- **Travel Grant for “International Congress of Mathematicians in Rio de Janeiro, Brazil”**, by American Mathematical Society (Award \$3300)
- **Travel Grant for “Southeastern Analysis Meeting 2019”**, by The University of Alabama, Tuscaloosa, AL (Award \$692)
- **Travel Grant for “Southeastern Analysis Meeting 2018”**, by Georgia Tech, Atlanta, GA (Award \$350)
- **Professional Activities Mini-grants from the Dean of Science, CCU:**
 1. \$2250: (September, 2021) To give an invited talk at Central Department of Mathematics, Tribhuvan University, Kathmandu, Nepal.
 2. \$2400: (February, 2019) To attend the “Second International Conference on Applications of Mathematics to Nonlinear Sciences”, Pokhara, Nepal
 3. \$ 250: (May, 2018) To attend a Workshop on Collaborative Research in Mathematical Sciences, Mercer University, Macon, GA
 4. \$ 450: (February, 2018) To attend a talk at Southeastern Analysis Meeting at Georgia Tech, Atlanta, GA
 5. \$1750: (September, 2017) To give an invited talk at Tribhuvan University, Kathmandu, Nepal
 6. \$450: (March, 2017) To attend Southeastern Analysis Meeting at University of Tennessee, Knoxville, TN
 7. \$450: (January, 2017) To attend Joint Mathematics Meetings, Atlanta, GA
 8. \$1500: (May, 2016) To attend the “International Conference on Applications of Mathematics to Nonlinear Sciences”, Kathamndu, Nepal
 9. \$1200: (January, 2015) To attend Joint Mathematics Meetings, San Antonio, TX
- **Outstanding Research by a Doctoral Candidate, 2013-2014**, Department of Mathematics, The University of Alabama, Tuscaloosa, AL

Service

- **Calculus I Coordinator**
Department of Mathematics and Statistics, Coastal Carolina University
Fall 2017 – Present
- **Assistant Professor Search Committee Member**
Department of Mathematics and Statistics, Coastal Carolina University
Fall 2017 - Spring 2018
- **Faculty Senator**
From Department of Mathematics and Statistics, Coastal Carolina University
2016 – 2019
- **Lecturer Search Committee Chair**
Department of Mathematics and Statistics, Coastal Carolina University
Fall 2015 – Spring 2016
- **Assistant Professor Search Committee Member**
Department of Mathematics and Statistics, Coastal Carolina University
Summer 2016
- **Student Graders’ Supervisor**
Department of Mathematics and Statistics, Coastal Carolina University
January 2015 – December 2017

- **Committee Member**
International Conference on Analysis and its Applications 2020, Dhulikhel, Nepal
May 2020
- **Committee Member on Finance**
Second International Conference on Applications of Mathematics to Nonlinear Science,
Pokhara, Nepal
June 2019
- **Program Committee Member**
International Conference on Applications of Mathematics to Nonlinear Science, Kath-
mandu, Nepal
May 2016
- **High School Math Contest Volunteer**
Department of Mathematics and Statistics, Coastal Carolina University
2015 – Present
- **Faculty Judge at MAA Poster Competition**
MAA Southeastern Sectional Meetings, Wilmington, NC
March 2015
- **Faculty Judge at MAA Poster Competition**
Joint Mathematics Meetings, San Antonio, TX
January 2015
- **Faculty Judge at Undergraduate Research Competition**
Celebration of Inquiry, Coastal Carolina University

Professional Memberships

- Mathematical Association of America (2014 – Present)
- Association of Nepalese Mathematicians in America: Life Member
- American Mathematical Society (2009 – 2014)