Faculty Research 2015

- J.R. Graef and M Hill, Nonoscillation of all solutions of a higher order nonlinear delay dynamic equation on time scales, *Journal of Mathematical Analysis and Applications* 423 (2015), 1693–1703.
- J.R. Graef, J. Henderson., R. Luca, and Y. Tian, Boundary value problems for third order Lipschitz ordinary differential equations, *Proceedings of the Edinburgh Mathematical* Society 58 (2015), 183–197.
- J.R. Graef, L. Kong, and M. Wang, Infinitely many homoclinic solutions for second order difference equations with *p*-Laplacian, *Communications in Applied Analysis* 19 (2015), 95– 102.
- J.R. Graef and C. Tunç, Continuability and boundedness of multi-delay functional integrodifferential equations of the second order, *Revista de la Real Academia de Ciencias Exactas*, *Físicas y Naturales. Serie A. Matemáticas* 109 (2015), 169–173.
- J.R. Graef, D. Beldjerd, and M. Remili, On stability, ultimate boundedness, and existence of periodic solutions of certain third order differential equations with delay, *PanAmerican Mathematical Journal* 25 (2015), 82–94.
- J.R. Graef, L. Kong, and Q. Kong, Multiple solutions of systems of fractional boundary value problems, *Applicable Analysis* 94 (2015), 1288–1304.
- J.R. Graef, M. Arbaoui, J. Henderson, and A. Ouahab, Fractional differential inclusions in the Almgren sense with Riemann-Liouville derivatives, *Progress in Fractional Differentiation and Applications* 1 (2015), 93–102.
- J.R. Graef and M. Bartušek, Limit-point/limit-circle results for forced second order differential equations, Advances in Dynamical Systems and Applications 10 (2015), 11–26.
- J.R. Graef, J. Henderson, and A. Ouahab, Fractional differential inclusions in the Almgren sense, Fractional Calculus and Applied Analysis 18 (2015), 673–686.
- J.R. Graef, S. Saker, R. Mahmoud, and E. Tunç, Some new Lyapunov-type inequalities for third order differential equations, *Communications on Applied Nonlinear Analysis* 22 (2015), 1–16.
- 11. J.R. Graef, L. Kong, and M. Wang, Two nontrivial solutions for a discrete fourth order periodic boundary value problem, *Communications in Applied Analysis* 19 (2015), 487–496.
- J.R. Graef, L. Kong, Q. Kong, and M. Wang, A fractional boundary value problem with Dirichlet boundary condition, *Communications in Applied Analysis* 19 (2015), 497–504.
- J.R. Graef, S. Heidarkhani, and L. Kong, Nontrivial periodic solutions to second-order impulsive Hamiltonian systems, *Electronic Journal of Differential Equations* 2015 (2015), No. 204, 1–17.
- J.R. Graef, R. Avery, and X. Liu, Compression fixed point theorems of operator type, Journal of Fixed Point Theory and Applications 17 (2015), 83–97.
- J.R. Graef, L. D. Oudjedi, and M. Remili, Stability and square integrability of solutions of nonlinear third order differential equations, *Dynamics of Continuous, Discrete & Impulsive* Systems, Series A: Mathematical Analysis 22 (2015), 313–324.
- J.R. Graef, A. Benaissa, and M. Benchohra, Functional differential equations with delay and random effects, *Stochastic Analysis and Applications* 33 (2015), 1083–1091.
- J.R. Graef and C. Tunç, Global asymptotic stability and boundedness of certain multidelay functional differential equations of third order, *Mathematical Methods in the Applied Sciences* 38 (2015), 3747–3752.
- J.R. Graef and E. Tunç, Oscillation of fourth-order nonlinear dynamic equations on time scales, *PanAmerican Mathematical Journal* 25 (2015), 16–34.

- J.R. Graef, L. Kong, and, M. Wang, Existence of homoclinic solutions for second order difference equations with *p*-Laplacian, Discrete and Continuous Dynamical Systems, *Differential Equations and Applications*, AIMS Proceedings (2015), 533–539.
- 20. A. Ebiefung, How to Draw and Recognize Misreading Graphs, Part I, Proceedings, 28th Annual International Conference on Technology in Collegiate Mathematics, 2015.
- B.P. Belinskiy, J.W. Hiestand, and J.V. Matthews, Piecewise uniform optimal design of a bar with an attached mass, *Electron. J. Diff. Equ.*, Vol. 2015 (2015), No. 206, 1–17.
- C. Gao and B. Shamsaei, On the Evaluation of the most accurate animal model of pediatric medulloblastoma, Proceedings of Joint Statistical Meeting, VA: American Statistical Association (2015), 1121–1131.
- L. Kong, Eigenvalues for a fourth order elliptic problem, Proc. Amer. Math. Soc. 143 (2015), 249–258.
- J.D. Johnson, L. Kong, Michael G. Ruddy, and Alexander M. Ruys de Perez, Positive periodic solutions for a higher order functional difference equation, *Differ. Equ. Dyn. Syst.* 23 (2015), 195–208.
- J. Barrow, R. Deyeso III, L. Kong, F. Petronella, Positive radially symmetric solutions for a system of quasilinear biharmonic equation in the plane, *Electron. J. Diff. Equ.*, Vol. 2015 (2015), No. 30, 1–11.
- F. Gesztesy, S. Hofmann, and R. Nichols, Stability of square root domains associated with elliptic systems of PDEs on nonsmooth domains, J. Differential Equations 258 (2015), 1749–1764.
- F. Gesztesy, M. Mitrea, R. Nichols, and E. M. Ouhabaz, Heat kernel bounds for elliptic partial differential operators in divergence form with Robin-type boundary conditions II, *Proc. Amer. Math. Soc.* 143 (2015), No. 4, 1635–1649.
- J. Eckhardt, F. Gesztesy, R. Nichols, A. Sakhnovich, and G. Teschl, Inverse spectral problems for Schrodinger-type operators with distributional matrix-valued potentials, *Differential Integral Equations* 28 (2015), No. 5-6, 505–522.
- F. Gesztesy, S. Naboko, and R. Nichols, On a problem in eigenvalue perturbation theory, J. Math. Anal. Appl. 428 (2015), No. 1, 295-305.
- F. Gesztesy, H. Holden, and R. Nichols, On factorizations of analytic operator-valued functions and eigenvalue multiplicity questions, *Integral Eq. and Operator Th.* 82 (2015), No. 1, 61–94.
- 31. F. Gesztesy and R. Nichols, A Jost-Pais-type reduction of (modified) Fredholm determinants for semi-separable operators in infinite dimensions. Appeared in Recent Advances in Schur Analysis and Stochastic Processes - A Collection of Papers Dedicated to Lev Sakhnovich, D. Alpay and B. Kirstein (eds.), Operator Theory: Advances and Applications 244 (2015), 287-314.
- F. Gesztesy and R. Nichols, Some applications of almost analytic extensions to operator bounds in trace ideals, *Methods Funct. Anal. Topology* 21 (2015), No. 2, 151–169.
- T.W. Haynes, M.A. Henning, L.C. van der Merwe, and A. Yeo, Progress on the Murty-Simon Conjecture on diameter-2 Critical Graphs: a survey, *Journal of Combinatorial Optimization* 30 (2015), no. 3, 579–595.
- W.J. Desormeaux, T.W. Haynes, and L. van der Merwe, Connected domination stable graphs upon edge addition, *Quaestiones Mathematica* 38 (2015), no. 6, 841–848.
- X. Wang, D. Gao, and J. Wang, Influence of human behavior on cholera dynamics, Mathematical Biosciences (2015), vol. 267, 41–52.
- T. Huynh, G. Hou, J. Wang, M. Hou, and M. Kotinis, A hybrid virtual reality simulation system for wave energy conversion, *International Journal of Computational Engineering Research*, vol. 5(6) (2015), 50–60.

- D. Posny, J. Wang, Z. Mukandavire, and C. Modnak, Analyzing transmission dynamics of cholera with public health interventions, *Mathematical Biosciences* 2015, vol. 264, 38–53.
- 38. J. Tian and J. Wang, Some results in Floquet theory, with application to periodic epidemic models, *Applicable Analysis* (2015), vol. 94, 1128–1152.
- X. Wang and J. Wang, Analysis of cholera epidemics with bacterial growth and spatial movement, *Journal of Biological Dynamics*, vol. 9(1) (2015), 233–261.
- 40. K. Crosby, J. Eliseo, A. Ledoan, and D. Mazowiecki, Zeros of Partial Sums of the Square of the Riemann Zeta-Function, Collaborative Mathematics and Statistics Research, Topics from the 9th Annual UNCG Regional Mathematics and Statistics Conference (Edited by Jan Rychtář, Maya Chhetri, Sat Gupta and Ratnasingham Shivaji), Springer Proc. Math. Statist. 109 (2015), 51–65.
- A.H. Ledoan and D. A. Goldston, The jumping champion conjecture, *Mathematika* 61 (2015), Issue 3, 719–740.
- 42. A.H. Ledoan and D. A. Goldston, Limit Points of the Sequence of Normalized Differences Between Consecutive Primes, Analytic Number Theory: In Honor of Helmut Maier's 60th Birthday (Edited by Carl Pomerance and Michael Th. Rassias), Springer International Publishing, Switzerland, 2015, 115–125.