

Vita

Jon M. Ernstberger

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Education

- Ph.D., Computational Mathematics. North Carolina State University. 2008.
- M.S., Mathematics. Murray State University. 2003.
- B.S., Applied Mathematics Area. Murray State University. 2001.

Positions

- **Faculty Chair, Graduate and Adult Programs. LaGrange College. 2016-Present.**
Academic oversight of graduate and adult education programs. Foci include solidifying policy/practice, increasing enrollment and retention, and refining current and developing new, institution-appropriate programming with mixed modes of delivery (graduate and adult). Convene the Graduate and Adult Education Councils.
- **Director of Instructional Technology. LaGrange College. 2015-2016.**
Analyzed classroom spaces and online educational tools, anticipating technological needs for the campus and new building projects, planning and purchasing of needed or recommended technology, and faculty development for classroom technologies.
- **Director of Online Instruction. LaGrange College. 2014-2016.**
Designed strategy for ongoing offering of online courses including: faculty/student technical support, pedagogical support, and tools for synchronous/asynchronous delivery. Led online courses to be offered in-house (for substantial savings) and the new LMS choice and implementation process. Served as a planner for an expanded faculty development strategy. Developed statements of best practices, revised institutional policies and practices for improved delivery of online courses, and co-developed the academic certification at LaGrange College. Led a team to expand reach of faculty pedagogical development. Applied for and received acceptance into NC-SARA. Reported statistical data to accrediting bodies and maintained state/national authorizations for offering distance courses. Met 2020 Vision Statement goals by 2015 for enrollment and helped LaGrange College achieve 35% student enrollment in online courses.
- **Program Coordinator for Online Learning. LaGrange College. 2012-14.**
Served as liaison between LaGrange College administration and Learning House as online courses and programs were developed. Authored policy, administered training sessions, managed online instruction budget, and oversaw technology purchases.
- **Associate Professor of Mathematics. LaGrange College. 2008-Present.**
Hired as Assistant Professor in 2008; received tenure and promotion in 2014. Maintained regular teaching, advisoral, and committee duties; published and engaged in multiple conference circles; managed multiple undergraduate research projects; co-developed the Computational Mathematics degree and concentrations while originating those courses; sat on the exploratory faculty self-governance committee; and chaired the Sustainability Council. Program coordinator for CORE 1140 (Computer Applications).

- **Lecturer. North Carolina State University. 2007-2008.**
Carried regular teaching load and maintained research program.

Teaching Experiences

- **LaGrange College**—Math: Basic Algebra; College Algebra; Pre-calculus; Statistics, Calculus I, II, and III; Differential Equations, Probability Theory, Programming for MATLAB in the Sciences, Mathematical Modeling, Data Mining, Numerical Methods. General Education: quantitative reasoning and financial planning. Interim: Service Learning Course.
- **NC State University** – Finite Mathematics; College Algebra; Pre-calculus; Calculus I,II; Calculus I,II for Life Sciences.
- **Murray State University** – Basic Algebra.

Research Interests

Pedagogical research interests include statistical analyses of different instructional techniques/processes and faculty development (in particular via the use of social media). Scientific research interests include stochastic search techniques for the global optimization of large dimension problems. Most notably, graceful labeling of trees of size greater than $N=30$.

Professional Service

Educational Service

- Co-authored the documentation for an academic certification at LaGrange College. Fall 2014.
- Co-created *Introduction to Online Learning* and *Introduction to Computing* courses (CORE 1130 and CORE 1135) in Spring 2014.
- Originated the *Data Mining* course (MATH 3092) as part of the Computational Mathematics (emphases/concentrations) in Spring 2011-Spring 2012 terms. Taught in Spring 2013.
- Originated the *Mathematical Modeling* course (MATH 3185) as part of the Computational Mathematics (emphases/concentrations) in Spring 2011-Spring 2012 terms.
- Co-designer of the Computational Mathematics Emphasis (general science majors) and Concentration (mathematics majors only).
- Originated the *Programming in MATLAB for the Sciences* (INTM 3490/MATH 2241) course. This course was a necessary inclusion in the departmental course offerings to better prepare sciences division students for their careers or graduate school.
- Collaborated with two professors (A. Lingenfelter and L. McMullen) to design and lead the pilot service-learning January term courses. Primarily instructed the *Affordable and Sustainable Housing* (INTM 3409) course. Events were organized with three speakers and eight private or not-for-profit organizations.

College and Community Service

- Member, Promotion and Tenure Committee. 2016-2017.
- Invited faculty speaker, Opening Session, LaGrange College. Fall 2016.
- Member, Academic Services Committee. (Managed faculty funding for conference travel.) 2015-2016.
- Faculty Institute. "Online Learning at LaGrange College". August 2014, 2015.

- Suber Grant proposal for Google Glass in Higher Education. December 2013.
- Extended Institutional Planning Committee. September 2013-Present.
- Invited contributor to Leadership Council Subcommittee on Online Learning. August 2013-May 2014.
- “iPads, Apps, and Google.” Business faculty presentation. August 2013.
- Student Marshal since May 2013.
- Unfunded NSF Grant proposal for network improvement on LaGrange College Campus. Co-authored with W. McCoy, C. Hu. Spring 2013.
- Chair of Online Review Group (ORG). (2012-2015).
- 3D Journeys: “Irish Sustainability”. March 2012.
- Planned Seminar About Learning and Teaching (SALT) Lecture Series. Fall 2011-Spring 2012.
- Chaired Sustainability QEP Document-Writing Team. Fall 2011.
- Member “Good of the Order Committee” (2011).
- Servant Scholar Implementation Committee (2011-2014).
- “YouTube, PODcasts, and the iPod in the Classroom.” SALT series. March 29, 2011.
- Sustainability Council. 2008-12. I have served as secretary, chair of the Community Education subcommittee, and chair of the Awards Committee. Designed Theme House website and main council blog. Responsible for SC commitments throughout the year.
- New faculty orientation. Fall 2010, Fall 2016.
- Co-investigator on a funded Suber Grant with Prof. Nickie Cauthen. Seven Daughters of Eve. Created web application to be used as tool in biology and mathematics courses. January 2010.
- “SMARTBoard in the Classroom” demonstration. LaGrange College. October 2009.
- Faculty Secretary. 2008-09 academic year.
- Unfunded Suber Grant application for improvement across LaGrange College Campus. Co-authored with Oliver Ferrari, MarionEco. INTM 2012.
- Judge for the Columbus Regional Science and Engineering Fair. February 2010.
- Deacon, Broad St. Church of Christ. 2012- current.
- Cub Scouts Chattahoochee Council fundraiser chair, Pack 21 fundraiser chair. (2014-2016)

Scholarly Activity

Published/Reviewed

- Ernstberger, J. and Venable, M. (2015). “Snapchat as a Communication Tool in Online Education.” ACM eLearn Magazine. <http://elearnmag.acm.org/archive.cfm?aid=2893353>
- Long, W. E. and (Sponsor), J. Ernstberger (2013). “Modeling Atmospheric Carbon Dioxide over the United States.” SIAM Undergraduate Research Online (SIURO). Retrieved 23 September 2013 from <http://dx.doi.org/10.1137/13S012352>.
- Z. Hu, R.C. Smith and J. Ernstberger, “The homogenized energy model for characterizing polarization and strains in hysteretic ferroelectric materials: Implementation algorithms and data-driven parameter estimation techniques,” *Journal of Intelligent Material Systems and Structures*, 23(16), pp. 1869–1894, 2012.
- Hu, Z., Smith, R.C., and Ernstberger J. “Data-driven techniques to estimate parameters in a rate-dependent ferromagnetic hysteresis model.” *Physica B: Physics of Condensed Matter* 407 (2012), pp. 1394-1398.
- Ernstberger, J. M., Smith, R. C., “Efficient parameter estimation techniques for hysteresis models” in *Behavior and Mechanics of Multifunctional Materials and Composites 2009*, edited by Zoubeida

Ounaies, Jiangyu Li, Proceedings of SPIE Vol. 7289 (SPIE, Bellingham, WA 2009) 728904.

- Ernstberger, J. M., Smith, R. C., “High-speed parameter estimation algorithms for nonlinear smart materials” in Modeling, Signal Processing, and Control for Smart Structures 2007, edited by Douglas K. Lindner, Proceedings of SPIE Vol. 6523 (SPIE, Bellingham, WA 2007) 65230S.
- Edmonds Jr., B., Ernstberger, J., Ghosh, K., Malaugh, J., Nfodjo, D., Samyono, W., Xu, X., Dausch, D. E., Goodwin, S., Smith, R. C., “Electrostatic operation and curvature modeling for a MEMS flexible film actuator” in Smart Structures and Materials 2004: Modeling, Signal Processing, and Control, edited by Ralph C. Smith, Proceedings of SPIE Vol. 5383 (SPIE, Bellingham, WA 2004) pp. 134-143.
- T. Burden, J. Ernstberger, and K.R. Fister, “Optimal Control Applied to Immunotherapy,” Discrete and Dynamical Systems, Series B. Vol. 4, No. 1, pp. 134-146, February 2004.

Undergraduate Research Projects

- Justin Fetner and Kyle Gutowski. “LaGrange College Online Courses: Interaction of Student Responses.” Fall 2016.
- Justin Slay. “Modeling the Atmospheric Carbon Dioxide due to Forest Fires.” Spring 2016.
- Nicholas Stavrow and Patrick Riley. Statistics on Students Responses to Forum Posts by Race and Gender. Fall 2015.
- J. Lovin. “Optimization of LaGrange College Admissions Counselors’ Paths Using Student Data”. Published in *Citations* (a LaGrange College undergraduate research publication.)
- T. Conrad Clevenger. “The Mathematics Behind Math Placements at LaGrange College”. Undergraduate advisor and presentation advisor for 2014 MAA Southeastern Meeting.
- Kayla S. Cline. 2013-14. “Numerical Optimization and Cost Functionals.” Undergraduate advisor and presentation advisor for 2014 MAA Southeastern Meeting. Won the LaGrange College Hines Undergraduate Research Award for basic research with “Performance of Numerical Optimization Routines”. Published in *Citations* (a LaGrange College undergraduate research publication.)
- Kayla S. Cline. 2012-13. “Modeling the Heating and Cooling of the LaGrange College Lewis Library.”
- T. Conrad Clevenger and Stephen A. Porrello. “Numerical Solutions to Ordinary Differential Equations: Euler, Improved Euler, and Runge-Kutta 45.” Advised for content and presentation at 2013 Southeastern MAA.
- Kayla S. Cline. “Modeling the Tacoma Narrows Bridge.” Advised for content and presentation at 2013 Southeastern MAA.
- W. E. (Trae) Long. 2010-12. “Modeling Carbon Dioxide Concentration Over the Continental United States.” Advisor for content and presentations. Presented at SE MAA 2012, poster presentation at LaGrange College, and publication.
- George B. Lankford. 2010-11. “Modeling the Heating and Cooling of the LaGrange College Science Building.” Advisor for presentation at SEARCDE (2011) and Conference for African American Researchers in Mathematics (CAARMS) 17. Note: G. Lankford won the award for best undergraduate poster presentation.
- Amanda M. Olsen. 2009-10. “Octave Graph Theory Toolbox.” (<http://bit.ly/dSdqd1>). Published in *Citations* (a LaGrange College undergraduate research publication.)

Professional Activity

- “#HigherEdScope: A New Frontier in Digital Development” (<http://bit.ly/2hflLin>) with Dr. Melissa Venable. Presented at OLC Accelerate 2016 conference.
- Co-panelist of “Podcasters Panel: “Long Tail” Professional Development for Online Education

Professionals” at OLC Accelerate 2016. November 2016. #podpanel

- HigherEdScope Podcast with Melissa Venable. (higheredscope.com, <http://bit.ly/2gQvUiJ>)
- “Going the Distance: Planning Through the Lens of Online Learning” (<http://bit.ly/2h0V0h3>) with Dr. Carol Yin. Accepted at the SCUP 2016 Southern Regional Conference. October 2016.
- 96th MAA Southeast Conference. Executive Committee; Project NExT-SE Co-coordinator. October 2016.
- Invited Talk, Winthrop University. “Optimized Classroom Scheduling at LaGrange College.” June 2016.
- 4th Annual LaGrange College Teaching & Learning Conference. Co-organizer. May 2016.
- Colloquium talk, Berry College. “Optimized Classroom Scheduling at LaGrange College.” March 2016.
- 95th MAA Southeast Conference. Executive Committee; Project NExT-SE Co-coordinator. March 2016.
- “Snapchat: Bridging the Communication Chasm in Online Courses” (<http://bit.ly/2h4IA5P>) with Melissa Venable. 21st Annual Online Learning Consortium International Conference on Online Learning. October 2015.
- Expert interview for computerscience.org. 2015.
- “The Best Addition to My College Classroom.” Published by bestcolleges.com. 2015.
- 3rd Annual LaGrange College Teaching & Learning Conference. Co-organizer with S. B. Mallory and A. Myers. May 2015.
- 94th MAA Southeast Conference. Executive Committee; Project NExT-SE Co-coordinator.
- Social media director for MAA Southeast (2015 – present).
- 2nd Annual LaGrange College Teaching & Learning Conference. Co-organizer with S. B. Mallory and C. Hu. May 2014.
- “An Online, General Education Math/Finances/Spreadsheet Course v. 3.x”. MAA Southeastern Section Meeting, UNC Wilmington. March 2015.
- 93rd MAA Southeast Conference. Executive Committee; Project NExT-SE Co-coordinator; session chair, “Distance and Digital Learning In Higher Education Mathematics”; executive committee. March 2015.
- 20th Annual Online Learning Consortium (OLC, formerly SLOAN-C) International Conference on Online Learning. October 2014.
- Distance Learning Administration Conference participant. June 2014.
- “Lessons Learned from a First-Time Online College Algebra Course.” Project NExT-SE Planner for 92nd Southeastern MAA Conferences. Southeastern MAA. March 2014
- Learning House Certificate of Mastery. Granted, August 2014. Based upon completion of four-certificate courses.
- 19th, 20th Annual SLOAN-C International Conference on Online Learning. Served as Social Media Ninja.
- 2013 Learning House Connect Conference in Louisville, KY. July 2013.
- 1st Annual LaGrange College Teaching & Learning Conference. Co-organizer with S. B. Mallory and C. Hu. May 2013.
- “A Metaheuristic Search Technique for Graceful Labels of Graphs”. 2013 Southeastern MAA Conference. Participated in and invited speaker for online learning at Project NExT Session at Southeastern MAA Conference at Winthrop University. March 2013.
- “A Metaheuristic Search Technique for Graceful Labels of Graphs”. Forty-Fourth Southeastern International Conference on Combinatorics, Graph Theory, and Computing. Florida Atlantic University. March 2013.
- Ernstberger, J. M., Perkins, A.D., “Stochastic Search Methods for the Graceful Labeling of Undirected and Unweighted Graphs.” In progress.

- 2012 Learning House Connect Conference in Louisville, KY. July 2012.
- 2012 Southeastern MAA Conference. Contributed to NExT-SE sessions and chaired the “Advanced Undergraduate Modeling” session. Presented “Reflections on the Initiation of a Modeling-Focused Undergraduate Research Program”.
- AASHE 2011. Pittsburgh. Presented at contributed poster session, “Modeling the Heating and Cooling of the LaGrange College Science Building.”
- 2011 Southeastern MAA Conference. Judged “Math Jeopardy” semi-final round. Project NExT-SE participant.
- Applied and was accepted to Project NExT-SE. Spring 2011.
- Applied for Project NExT. Spring 2010.
- Member of the planning committee for Columbus State University-hosted West Central Georgia Regional STEM Institute (WCGRSI) to Develop Learning Communities. Co-writer of accepted PRISM grant for funding. December 2009. Served as conference internet technologies coordinator.
- 16th International SPIE Symposium on Smart Structures and Nondestructive Evaluation and Health Monitoring. March 2009. “Efficient parameter estimation techniques for hysteresis models.”
- 14th International SPIE Symposium on Smart Structures and Nondestructive Evaluation and Health Monitoring. March 2007. “High-speed parameter estimation algorithms for nonlinear smart materials.”
- Society for Math Biology. Annual Meeting. Knoxville, TN. Presented “Optimal Control Applied to Immunotherapy” with K. R. Fister. July 2001.

Awards and Recognitions

- Recipient, LaGrange College Exemplary Teacher Award. General Board of Higher Education and Ministry of the United Methodist Church. 2016.
- Recipient, Outstanding Teaching Assistant. Mathematics Department, NC State University. 2006.