Manuel J. Sanders

Professor of Mathematics
Department of Computer Science and Mathematics
University of South Carolina Beaufort
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Education

University of Tennessee, Knoxville, TN.
Ph.D., Mathematics (Geometric Topology), 1999
Thesis: *Existence of Certain Compact Contractible Manifolds Containing Disjoint Spines*
Advisor: Dr. Robert J. Daverman, Professor Emeritus

University of North Carolina at Greensboro, Greensboro, NC.
M.A., Mathematics (Dynamical Systems), 1993
Thesis*: Polyhedral and Arc Attractors*
Advisor: Dr. Paul F. Duvall, Professor Emeritus

University of North Carolina at Greensboro, Greensboro, NC.
B.A., Mathematics, 1991

Administrative Positions

University of South Carolina Beaufort
Chair, Department of Mathematics and Computational Science, 2011- 2021*
Responsible for administrative oversight of faculty performance, hiring, budgeting, equipment procurement and security, faculty development, curricular planning and assessment, and overall departmental strategic planning.
*(Visiting Fulbright Scholar of Mathematics at Tampere University of Technology, Tampere, Finland during AY 2017-18, department split 2018)

University of South Carolina Beaufort
Director of General Education, 2008-2011
*Responsible for overall planning, administration, and assessment of the General Education Program. Note: The General Education program consists of core academic courses and requirements in the sciences, humanities, and other core areas that all undergraduate students must complete, typically during the first two years of undergraduate education.

Academic Positions

- Fulbright Scholar of Mathematics, Tampere University of Technology, Finland, 2017-18
- Professor of Mathematics, University of South Carolina Beaufort, 2014-present
- Associate Professor of Mathematics, University of South Carolina Beaufort, 2005-2014
- Assistant Professor of Mathematics, Armstrong State University, 2002-2005
- Assistant Professor of Mathematics, McMurry University, 2000-2002

- Assistant Professor of Mathematics, Clarke University, 1999-2000
- Graduate Teaching Associate, University of Tennessee, 1993-1999

Peer-Reviewed Publications

Michael J. Evans and Manuel J. Sanders, *Some subclasses of the Real-Valued Honorary Baire Two Functions on R^n,* Rendiconti del Circolo Matematico Palermo (2) 61 (2012), no. 1, 79-90 .

Manuel J. Sanders*, An n-cell in R^(n+1) that is not the attractor of any IFS in R^(n+1),* Missouri Journal of Mathematical Sciences*,* Volume 21 *Number 1 (2009), Pages 13–20*

Manuel J. Sanders, *Some Non-Attractors of Iterated Function Systems*, Texas Project NExT Journal *(electronic), Vol. 1, 2003, http://cs.southwestern.edu/txcmj/tx-next.htm*

Manuel J. Sanders, *Disjoint spine phenomena in certain contractible n-manifolds (n >= 5),* Topology and its Applications*, Volume 120, Issue 3, 15 May 2002, Page 301*

Other Publications and Writings

Manuel J. Sanders, *College Prep Math Workbook,* Createspace, 2015 ISBN: 9781511433334

Reviewer for Advances in Geometry: *Non-existence of 6-dimensional pseudomanifolds with complementarity,* Bagchi & Datta, Adv. Geom. 4 (2004) 537-50

Grants and Fellowships

Fulbright Scholar Award, Finland: *Mathematical Competencies in STEM: Preparing the Researchers of Tomorrow,* 2017-18

CSUMS (Computational Science Training for Undergraduates in the Mathematical Sciences): *Modeling and Computing of Wireless Indoor Location Systems*, National Science Foundation (NSF) grant, Number 0703546, 2006, with Yiming Ji, Co-PI, Ph.D. Computer Science

PRISM (Partnership for Reform in Science and Mathematics)
Associate grant working with P-16 educators toward improvement in STEM education in the southeastern US, 2004-2005, Associate level award

PMET (Preparing Mathematicians to Educate Teachers)- *Mathematics Educator Joins Mathematics Scientist- Team-Teaching Prospective K-8 Teachers*, Co-PI- Hadavas, NSF grant administered by the Mathematical Association of America, 2004, funded ($3000)

Kiva Research Fellow, Fellowship award for mathematics research at McMurry University (2001-02)

Project NExT Fellow (Texas Section of MAA), Fellowship award for promoting professional development of recent doctoral recipients in the mathematical sciences (2000-02)

Science Alliance Fellow (Oak Ridge National Laboratories),
Fellowship award at University of Tennessee for graduate study and research, 1993-1999

Selected Addresses and Activities

Jun 2019 **Invited Address,** South Carolina Youth Leadership Conference, Artificial Intelligence and the Future Workspace, University of South Carolina Beaufort

Apr 2018 **Invited Address**, American Studies Seminar, A Non-technical Introduction to Some Technical Words (and Ideas): *Romancing Quantum Information,* University of Helsinki, Helsinki, Finland

Mar 2018 **Fulbright Forum on Education, Innovation, Science and Art**, *Discrete Encounters in Mathematics*, University of Helsinki, Helsinki Finland

Oct 2017 **Inverse-Problems Group Seminar,** *Iterated Function Systems- A Geometric Approach,* Tampere University of Technology, Tampere Finland

Oct 2017 **Invited address**, American Voices Seminar, University of Turku, Turku Finland

May 2017 **Invited address**, South Carolina Youth Leadership Conference, *Full STEM Ahead*

May 2016 **Invited address**, South Carolina Youth Leadership Conference, *STEM Careers: Making Math Count II*

Dec 2015 **Invited Address**, South Carolina Secondary School Counselor Workshop, *Mathematics and its Role in College Preparation and Success*

May 2015 **Invited Address**, South Carolina Youth Leadership Conference, *STEM Careers: Making Math Count*

Jan 2012 **Session Chair (Real Analysis) and Address** Joint Meetings of the AMS/MAA, *"Some subclasses of the Real-Valued Honorary Baire Two Functions on R^n",* Boston, MA

Jan 2008 **Contributed Address**, Joint Meetings of the AMS/MAA, "*An n-cell in R^(n+1) which is not the attractor of any IFS on R^n"*, San Diego, CA

Jan 2007 **Contributed Address**, Joint Meetings of the AMS/MAA, "*Using Mapping Software in the Mathematics Classroom"*, New Orleans, LA

Oct 2006 **Invited Address,** Mathematics Research Seminar, "*Coincidence Points of Commuting Functions"*, Armstrong State University, Savannah, GA

Mar 2006 **Participant,** 40th Annual Spring Topology and Dynamical Systems Conference, Greensboro, NC

Aug 2005 **Invited Panel,** Calculus Texts and Student Learning, New Orleans, LA

Apr 2005 **Participant,** 7th *Annual Legacy of R.L. Moore Conference* – Conference dedicated to improving science and mathematics education in the tradition of R. L. Moore, Austin, TX

Mar 2005 **Colloquium Speaker,** Armstrong State University, "*On the Axiom of Choice"*, Savannah, GA

Nov 2004 **Invited Panel,** "*Calculus Text Design and Raising Achievement of Algebraically Under prepared Students"*, New Orleans, LA

Feb 2004 **Colloquium Speaker**, Armstrong State University, "*Iterated Function Systems: A Geometric Introduction"*, Savannah, GA

Apr 2003 **Presentation**, Armstrong State University, "*Topology is…"*, Sav., GA

Mar 2003 **Participant,** 5th *Annual Legacy of R.L. Moore Conference*, Austin, TX

Oct 2002 **Colloquium Speaker,** Armstrong State University," *A Geometric Introduction to Simple-homotopy Theory"*, Savannah, GA

Jun 2002 **Participant,** Workshop in Geometric Topology, Calvin College, Grand Rapids, MI

Apr 2001 **Invited Address,** *4Th Annual Legacy of R.L. Moore Conference* (representing *Project NEx*T, Texas Section of MAA), Austin, TX

Oct 2000 **Invited Address**, Tri-College Mathematics Workshop, *"Disjoint Spine Phenomena in High-dimensional Contractible Manifolds"*, Hardin-Simmons University, Abilene, TX

Apr 2000 **Invited Address**, University of Wisconsin Milwaukee Colloquium in Mathematics and Physics, "*Some ideas in Simple-Homotopy Theory",*

Nov 1999 **Colloquium Speaker**, Clarke College, "*Iterated Function Systems: A Geometric Approach"*, Dubuque, IA

Selected Service Documentation

2018-2019 USCB Academic Master Plan Committee, 2019-2023

2015 **Author:** *Program Proposal for New Program in Mathematics (with tracks in Mathematical Sciences and Teacher Certification) (approved)*

2014 ***Author:*** *Program Proposal for New Minor in Data Science (approved)*

2012 **Author:** Full Program Reviews: B.A. in Psychology, B.S. in Business Administration

2010- **Author:** Annual Institutional Effectiveness for the Department of Mathematics and Computational Science at the University of South Carolina Beaufort

2010 **Consultant** (and education specialist): (with J. Salazar)- *Jasper County Port Feasibility Study (Jasper County, South Carolina)*

2007 **Co-author:** (with Yiming Ji)- *Program Proposal for New Program in Computational Science, (approved)*

2007-2011 **Author:** Wrote annual reports on the General Education Program for accreditation requirement procedures for Office of Institutional Effectiveness

2005- **Reviewer**: Wrote reviews of multiple new degree program proposals at USCB to include: Studio Art, Nursing, Communications, Elementary Education, Theatre, etc. (approximately 10 degree programs and minors together with concentrations, tracks, etc.)

Selected Committee Work

General Education Review Committee, 2018- present
SACS-COC Accreditation Team, 2018-2019
Academic Master Planning Committee, 2018-2019
Academic Council, 2008-present
Institutional Effectiveness Council, 2008- present
General Education Review Committee, 2008- , (Chair 2008- 2011)
Faculty Manual Committee, 2007- (Chair, 2009-2011, 2015- present)
Academic Steering Committee, 2014- present (Chair, 2014-2015)
Orientation Steering Committee, 2010- present
QEP Steering Committee, USCB 2006- 2008, 2015-2016

Courses and Curricula Committee, 2006-2009, 2010-2012, 2015-present (Chair 2009- 2012, 2015-2016)
Search Committees, Multiple administrative and faculty searches, 2000- present
University Library Committee, USCB 2005- 2007
College of Arts and Sciences Curriculum Committee, Armstrong State University (ASU) 2004-2005
Mathematics Luncheon Colloquium Committee, ASU 2002-2005, (Chair, 2003-2005)
Mathematics Department Tournament Committees, ASU 2002-2005

Courses Taught

Advanced Analysis
Advanced Calculus
Advanced Linear Algebra
Calculus I, II, III
College Algebra
Contemporary Topics in Mathematics
Discrete Mathematics
Differential Equations
Engineering Mathematics
Elementary Statistics
Finite Mathematics
Foundations of Geometry (for teachers)
Fractal Geometry
Honors Calculus I
Intermediate Analysis
Introduction to Proof
Linear Algebra
Mathematical Modeling
Mathematics for Elementary Teachers
Modern Geometry
Pre-Calculus
Senior Seminar (a capstone course)
Spirit and Structure of Mathematics
Topology