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Curriculum Vitae

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EDUCATION:

B.A.	1965	Westmar College
M.A.	1967	University of Massachusetts
Ph.D.	1969	Wesleyan University (Dissertation *On P-like spaces and their product with P-spaces* written under the direction of W. W. Comfort.)

PROFESSIONAL EXPERIENCE:

January 1980	– June 2017	Associate Professor and Professor, Howard University
September 1970	–December 1979	Assistant Professor, Associate Professor and Professor, California State University, Los Angeles (Except September 1975 – August 1976, Visiting Associate Professor, SUNY at Binghamton)
September 1969	–June 1970	Visiting Assistant Professor, Wesleyan University

RESEARCH PUBLICATIONS:

(With W. Comfort and S. Negrepontis) *F'-spaces and their product with P-spaces*, Pacific J. Math. **28** (1969), 489-502. (MR **39** #3440)

On the existence of $\mathfrak{c}$-points in $\beta\mathbb{N}\backslash\mathbb{N}$, Proc. Amer. Math. Soc. **21** (1969), 277-280. (MR **39** #922)

Minimal n-prime ideal spaces, Math. Ann. **199** (1972), 97-114. (MR **38** #291)

The existence of certain ultrafilters on $\mathbb{N}$ and a conjecture of Graham and Rothschild, Proc. Amer. Math. Soc. **36** (1972), 341-346. (MR **46** #7041)

Basically bounded sets and a generalized Heine–Borel Theorem, Amer. Math. Monthly **80** (1973), 549-552. (MR **48** #3000)

Preimages of points under the natural map from $\beta(\mathbb{N}\times\mathbb{N})$ to $\beta\mathbb{N}\times\beta\mathbb{N}$, Proc. Amer. Math. Soc. **37** (1973), 603-608. (MR **50** #11154)

The product of F-spaces with P-spaces, Pacific J. Math. **47** (1973), 473-480. (MR **48** #9643)

Finite sums from sequences within cells of a partition of $\mathbb{N}$, J. Comb. Theory (Series A) **17** (1974), 1-11. (MR **50** #2067)

(With M. Cates) *Partition theorems for subspaces of vector spaces*, J. Comb. Theory (Series A) **19** (1975), 13-25. (MR **52** #112)

(With M. Cates, P. Erdős, and B. Rothschild) *Partition theorems for subsets of vector spaces*, J. Comb. Theory (Series A) **20** (1976), 279-291. (MR **53** #10583)

(With W. Comfort) *Refining families for ultrafilters*, Math. Zeit. **149** (1976), 189-199. (MR **55** #285)

Partitions and sums of integers with repetition, J. Comb. Theory (Series A) **27** (1979), 19-32. (MR 81b:05018)

Partitions and sums and products of integers, Trans. Amer. Math. Soc. **247** (1979), 227-245. (MR 80b:10022)

Simultaneous idempotents in $\beta\mathbb{N}\backslash\mathbb{N}$ *and finite sums and products in* $\mathbb{N}$, Proc. Amer. Math. Soc. **77** (1979), 150-154. (MR 80f:05005)

Ultrafilters and combinatorial number theory, in Number Theory Carbondale 1979, M. Nathanson ed., Lecture Notes in Math. **751** (1979), 119-184. (MR 81m:10019)

Partitions and sums and products – two counterexamples, J. Comb. Theory (Series A) **29** (1980), 113-120. (MR 82b:05020)

Sums equal to products in $\beta\mathbb{N}$, Semigroup Forum **21** (1980), 221-255. (MR 81m:54040)

On a conjecture of Erdős, Faber and Lovasz about n-colorings, Canadian J. Math. **33** (1981), 563-570. (MR 82j:05058)

Minimal ideals and cancellation in $\beta\mathbb{N}$, Semigroup Forum **25** (1982), 291-310. (MR 83m:22007)

On density, translates, and pairwise sums of integers, J. Comb. Theory (Series A) **33** (1982), 147-157. (MR 84b:10075)

(With P. Erdős) *Enumeration of intersecting families*, Discrete Math. **48** (1984), 61-65. (MR 84b:10075)

Partitions and pairwise sums and products, J. Comb. Theory (Series A) **37** (1984), 46-60. (MR 85g:05019)

(With J. Berglund) *Filters and the weak almost periodic compactification of a discrete semigroup*, Trans. Amer. Math. Soc. **284** (1984), 1-38. (MR 85e:22005)

(With P. Milnes) *The ideal structure of* X^X, Semigroup Forum **30** (1984), 41-51. (MR 85i:22004)

(With J. Pym) *Free groups and semigroups in* $\beta\mathbb{N}$, Semigroup Forum **30** (1984), 177-193. (MR 86c:22002)

Ramsey's Theorem for sums, products, and arithmetic progressions, J. Comb. Theory (Series A) **38** (1985), 82-83. (MR 86c:05024)

The minimal ideals of a multiplicative and additive subsemigroup of $\beta\mathbb{N}$, Semigroup Forum **32** (1985), 283-292. (MR 87g:20106)

The ideal structure of the space of κ*-uniform ultrafilters on a discrete semigroup*, Rocky Mountain J. Math. **16** (1986), 685-701. (MR 88d:54031)

Summable ultrafilters and finite sums, in Logic and Combinatorics, S. Simpson ed., Contemporary Mathematics **65** (1987), 263-274. (MR 88h:03070)

(With W. Deuber) *Partitions and sums of (m,p,c)-sets*, J. Comb. Theory (Series A) **45** (1987), 300-302. (MR 89a:05013)

(With A. Blass) *On strongly summable ultrafilters and union ultrafilters*, Trans. Amer. Math. Soc. **304** (1987), 83-99. (MR 88i:03080)

(With D. Davenport) *Subprincipal closed ideals in* $\beta\mathbb{N}$, Semigroup Forum **36** (1987), 223-245. (MR 89h:54031)

Some equivalents of the Erdős sum of reciprocals conjecture, European J. Comb. **9** (1988), 39-47. (MR 89j:11007)

(With P. Milnes) *The* $\mathcal{LMC}$*-compactification of a topologized semigroup*, Czechoslovak Math. J. **38** (1988), 103-119. (MR 89c:22008)

(With V. Bergelson) *Density versions of two generalizations of Schur's Theorem*, J. Comb. Theory (Series A) **48** (1988), 32-38. (MR 90b:05017)

(With V. Bergelson) *A combinatorially large cell of a partition of* $\mathbb{N}$, J. Comb. Theory (Series A) **48** (1988), 39-52. (MR 89m:04003)

Is there a point of ω^* *that sees all others?* Proc. Amer. Math. Soc. **104** (1988), 1235-1238. (MR 89d:04008)

Solving equations in $\beta\mathbb{N}$, Annals N. Y. Acad. Sci. **552** (1989), 69-73.
(MR 90m:54036)

(With V. Bergelson) *Ultrafilters and multidimensional Ramsey theorems*, Combinatorica **9** (1989), 1-7. (MR 91f: 03101)

Ultrafilters and Ramsey Theory – an update, in Set Theory and its Applications, J. Steprāns and S. Watson eds., Lecture Notes in Math. **1401** (1989), 97-118. (MR 91f:03101)

(With V. Bergelson, H. Furstenberg, and Y. Katznelson) *An algebraic proof of van der Waerden's Theorem*, L'enseignement Mathematique **35** (1989), 209-215. (MR 91g:11010)

(With A. Blass) *Sums of ultrafilters and the Rudin-Keisler and Rudin-Frolík orders*, in General Topology and Applications, R. Shortt ed., Lecture Notes in Pure and Applied Math. **123** (1990), 59-70. (MR 91i:03093)

On creating sets with large lower density, Discrete Math. **80** (1990), 153-157. (MR 91k:28002)

(With V. Bergelson) *Nonmetrizable topological dynamics and Ramsey Theory*, Trans. Amer. Math. Soc. **320** (1990), 293-320. (MR 90k:03046)

The semigroup $\beta\mathbb{N}$ and its applications to number theory, in The Analytical and Topological Theory of Semigroups – Trends and Developments, K. Hofmann, J. Lawson, and J. Pym eds., de Gruyter Expositions in Math. **1** (1990), 347-360.

(With A. Lisan) *Does $\mathbb{N}^*$ contain a topological and algebraic copy of $\beta\mathbb{N}$?* Topology and its Applications **35** (1990), 291-297. (MR 91h:54026)

Strongly summable ultrafilters on $\mathbb{N}$ and small maximal subgroups of $\beta\mathbb{N}$, Semigroup Forum **42** (1991), 63-75. (MR 92a:54025)

(With J. Pym) *Closures of singly generated subsemigroups of βS*, Semigroup Forum **42** (1991), 147-154. (MR 92a:22004)

(With D. Davenport) *A proof of van Douwen's right ideal theorem*, Proc. Amer. Math. Soc. **113** (1991), 573-580. (MR 92f:54025)

The groups in $\beta\mathbb{N}$, in General Topology and Applications, S. Andima et. al. eds., Lecture Notes in Pure and Applied Math. **134** (1991), 129-146. (MR 92m:54048)

(With J. Berglund) *Sums of idempotents in $\beta\mathbb{N}$*, Semigroup Forum **44** (1992), 107-111. (MR 92k:54027)

(With V. Bergelson) *Ramsey Theory in non-commutative semigroups*, Trans. Amer. Math. Soc. **330** (1992), 433-446. (MR 93j:03025)

(With J. van Mill and P. Simon) *Increasing chains of ideals and orbit closures in $\beta\mathbb{Z}$*, Proc. Amer. Math. Soc. **114** (1992), 1167-1172. (MR 92g:54027)

(With J. Baker and J. Pym) *κ-topologies for right topological semigroups*, Proc. Amer. Math. Soc. **115** (1992), 251-256. (MR 92h:22005)

(With V. Bergelson and W. Deuber) *Rado's Theorem for finite fields*, in Proceedings of the Conference on Sets, Graphs, and Numbers, Budapest, 1991, Colloq. Math. Soc. János Bolyai **60** (1992), 77-88. (MR 94e:05031)

(With V. Bergelson) *Some topological semicommutative van der Waerden type theorems and their combinatorial consequences*, J. London Math. Soc. **45** (1992), 385-403. (MR 93j:05162)

(With J. Baker and J. Pym) *Elements of finite order in Stone-Čech compactifications*, Proc. Edinburgh Math. Soc. **36** (1993), 49-54. (MR 93m:22003)

(With H. Lefmann) *Partition regularity of $(\mathcal{M},\mathcal{P},\mathcal{C})$-systems*, J. Comb. Theory (Series A) **64** (1993), 1-9. (MR 95b:05016)

(With W. Woan) *Central sets in semigroups and partition regularity of systems of linear equations*, Mathematika **40** (1993), 169-186. (MR 95d:20105)

The topological-algebraic system $(\beta\mathbb{N}, +, \cdot)$, in Papers on General Topology and Applications, S. Andima et. al. eds., Annals of the New York Academy of Sciences **704** (1993), 155-163. (MR 95b:22007)

(With V. Bergelson) *Additive and multiplicative Ramsey Theorems in* $\mathbb{N}$ *– some elementary results*, Comb. Prob. and Comp. **2** (1993), 221-241. (MR 95b:05208)

(With I. Leader) *Image partition regularity of matrices*, Comb. Prob. and Comp. **2** (1993), 437-463. (MR 95j:05167)

(With V. Bergelson, W. Deuber, and H. Lefmann) *Rado's Theorem for commutative rings*, J. Comb. Theory (Series A) **66** (1994), 68-92. (MR 95f:05011)

(With V. Bergelson and A. Blass) *Partition theorems for spaces of variable words*, Proc. London Math. Soc. **68** (1994), 449-476. (MR 95i:05107)

(With A. Lisan) *Points very close to the smallest ideal of* βS, Semigroup Forum **49** (1994), 137-141. (MR 95c:22005)

(With J. Lawson and A. Lisan) *Separating points of* $\beta\mathbb{N}$ *by minimal flows*, Canadian J. Math. **46** (1994), 758-771. (MR 95e:22010)

(With D. Strauss) *Cancellation in the Stone-Čech compactification of a discrete semigroup*, Proc. Edinburgh Math. Soc. **37** (1994), 379-397. (MR 95j:22006)

(With V. Bergelson) *On IP*-sets and central sets*, Combinatorica **14** (1994), 269-277. (MR 96e:05013)

(With D. Strauss) *Topological and algebraic copies of* $\mathbb{N}^*$ *in* $\mathbb{N}^*$, New York J. Math. **1** (1995), 111-119. (MR 96j:22003)

(With W. Deuber, I. Leader, and H. Lefmann) *Infinite partition regular matrices*, Combinatorica **15** (1995), 333-355. (MR 96i:05173)

(With D. Strauss) *Nearly prime subsemigroups of* $\beta\mathbb{N}$, Semigroup Forum **51** (1995), 299-318. (MR 96k:54038)

Recent results on the algebraic structure of βS, in Papers on General Topology and Applications, S. Andima et. al. eds., Annals of the New York Academy of Sciences **767** (1995), 73-84. (MR 98k:22007)

(With D. Strauss) *Chains of idempotents in* $\beta\mathbb{N}$, Proc. Amer. Math. Soc. **123** (1995), 3881-3888. (MR 96b:54037)

(With D. Strauss) *Algebraic and topological equivalences in the Stone-Čech compactification of a discrete semigroup*, Topology and its Applications **66** (1995), 185-198. (MR 96j:22004)

(With D. Strauss) *Prime properties of the smallest ideal of* $\beta\mathbb{N}$, Semigroup Forum **52** (1996), 357-364. (MR 97c:54033)

(With V. Bergelson and B. Kra) *Iterated spectra of numbers – elementary, dynamical and algebraic approaches*, Trans. Amer. Math. Soc. **348** (1996), 893-912. (MR 97b:03058)

(With D. Strauss) *Compact subsemigroups of* $(\beta\mathbb{N}, +)$ *containing the idempotents*, Proc. Edinburgh Math. Soc. **39** (1996), 291-307. (MR 97h:22002)

(With A. Maleki and D. Strauss) *Central sets and their combinatorial characterization*, J. Comb. Theory (Series A) **74** (1996), 188-208. (MR 98d:22002)

(With V. Bergelson and I. Leader) *Sets partition regular for n equations need not solve* $n + 1$, Proc. London Math. Soc. **73** (1996), 481-500. (MR 97k:05016)

Algebra in βS *and its applications to Ramsey Theory*, Math. Japonica **44** (1996), 581-625. (MR 97k:03059)

(With V. Bergelson) *IP* sets in product spaces* in Papers on General Topology and Applications, S. Andima et. al. eds., Annals of the New York Academy of Sciences **806** (1996), 28-41. (MR 98b:05098)

(With H. Lefmann) *Canonical partition relations for (m,p,c)-systems*, Discrete Math. **162** (1996), 151-174. (MR 98a:05150)

(With V. Bergelson, P. Erdős, and T. Łuczak) *Dense difference sets and their combinatorial structure*, in The Mathematics of Paul Erdős, I, R. Graham and J. Nešetřil, eds., Springer, Berlin, (1997), 165-175. (MR 97i:11007)

(With W. Deuber, D. Gunderson, and D. Strauss) *Independent finite sums for* K_m*-free graphs*, J. Comb. Theory (Series A) **78** (1997), 171-198. (MR 98d:05140)

(With V. Bergelson and B. Weiss) *All-sums sets in* $(0, 1]$ *– Category and measure*, Mathematika **44** (1997), 61-87. (MR 98m:03099)

(With D. Strauss) *An algebraic proof of Deuber's Theorem*, Comb. Prob. and Comp. **7** (1998), 167-180. (MR 99g:05177)

(With I. Protasov and D. Strauss) *Strongly summable ultrafilters on abelian groups*, Matem. Studii **10** (1998), 121-132. (MR 2001d:22003)

(With I. Leader) *Partition regular inequalities*, European J. Comb. **19** (1998), 573-578. (MR 99g:05178)

(With V. Bergelson and R. McCutcheon) *Notions of size and combinatorial properties of quotient sets in semigroups*, Topology Proceedings **23** (1998), 23-60. (MR 2001a:20114)

(With I. Protasov and D. Strauss) *Topologies on* S *determined by idempotents in* βS, Topology Proceedings **23** (1998), 155-190. (MR 2001j:54048)

(With V. Bergelson and I. Leader) *Additive and multiplicative Ramsey Theory in the reals and the rationals*, J. Comb. Theory (Series A) **85** (1999), 41-68. (MR 99m:05159)

(With I. Leader) *The semigroup of ultrafilters near* 0, Semigroup Forum **59** (1999), 33-55. (MR 2002h:22004)

(With S. García-Ferreira and D. Strauss) *Orderings of the Stone-Čech remainder of a discrete semigroup*, Topology and its Applications **97** (1999), 127-148. (MR 2000j:54027)

(With R. McCutcheon) *Weak VIP systems in commutative semigroups*, Topology Proceedings **24** (1999), 199-221. (MR 2002k:20108)

(With A. Maleki and D. Strauss) *Linear equations in the Stone-Čech compactification of* $\mathbb{N}$, Integers **0** (2000), #A02, 1-20. (MR 2001i:54020)

(With D. Davenport, I. Leader, and D. Strauss) *Continuous homomorphisms on* $\beta\mathbb{N}$ *and Ramsey Theory*, New York J. Math. **6** (2000), 73-86. (MR 2001a:05148)

(With D. Strauss) *Infinite partition regular matrices, II – extending the finite results*, Topology Proceedings **25** (2000), 217-255. (MR 2003j:05124)

(With V. Bergelson) *Partition regular structures contained in large sets are abundant*, J. Comb. Theory (Series A) **93** (2001), 18-36. (MR 2002i:05116)

Problems and new results in the algebra of βS *and Ramsey Theory*, in Unsolved problems on mathematics for the 21^{st} Century, J. Abe and S. Tanaka, eds., IOS Press, Amsterdam (2001), 295-305. (MR 2004a:22003)

(With R. McCutcheon) *VIP systems in partial semigroups*, Discrete Math. **240** (2001), 45-70. (MR 2003b:20085)

(With I. Leader and D. Strauss) *Image partition regular matrices – bounded solutions and preservation of largeness*, Discrete Math. **242** (2002), 115-144. (MR 2002j:05146)

(With R. McCutcheon) *One Sided Ideals and Carlson's Theorem*, Proc. Amer. Math. Soc. **130** (2002), 2559-2567. (MR 2003e:05136)

(With D. Davenport and D. Strauss) *Triangle free sets and arithmetic progressions – two Pisier type problems*, Electronic J. Comb. **9** (2002), #R22, 1-19. (MR 2003i:05132)

(With I. Farah and J. McLeod) *Partition theorems for layered partial semigroups*, J. Comb. Theory (Series A) **98** (2002), 268-311. (MR 2004b:03062)

(With D. Strauss) *Recent progress in the topological theory of semigroups and the algebra of* βS, in Recent Progress in General Topology, II, M. Husek and J. van Mill, eds., Elsevier, Amsterdam, (2002), 227-251. (MR 1970000)

(With I. Leader and D. Strauss) *Infinite partition regular matrices – solutions in central sets*, Trans. Amer. Math. Soc. **355** (2003), 1213-1235. (MR 2003h:05187)

(With D. Strauss and Y. Zelenyuk) *Large rectangular semigroups in Stone-Čech compactifications* Trans. Amer. Math. Soc. **355** (2003), 2795-2812. (MR 2004g: 22001)

Image partition regularity over the reals, New York J. Math., **9** (2003), 79-91. `http://nyjm.albany.edu:8000/j/2003/9-6.html` (MR 2004h:05124)

(With J. Pym and D. Strauss) *Multiplications in additive compactifications of* $\mathbb{N}$ *and* $\mathbb{Z}$, Topology and its Applications, **131** (2003), 149-176. (MR 2004d:22003)

(With I. Leader and D. Strauss) *Separating Milliken-Taylor systems with negative entries*, Proc. Edinburgh Math. Soc. **46** (2003), 45-61. (MR 2004a:05155)

(With I. Leader and D. Strauss) *Open problems in partition regularity* Comb. Prob. and Comp. **12** (2003), 571-583. (MR 2005e:05147)

(With R. Kopperman) *Order compactifications of discrete semigroups*, Topology Proceedings **27** (2003), 479-496. (MR 2005d:05148)

(With D. Strauss) *Independent sums of arithmetic progressions in* K_m*-free graphs*, Ars Combinatoria **70** (2004), 221-243. (MR 2005a:05148)

(With R. McCutcheon) *Partition theorems for left and right variable words*, Combinatorica **24** (2004), 271-286. (MR 2005e:05148)

(With T. Carlson and D. Strauss) *The Graham-Rothschild Theorem and the algebra of* βW, Topology Proceedings **28** (2004), 361-399. (MR 2006h:54018)

(With T. Carlson and D. Strauss) *Ramsey theoretic consequences of some new results about algebra in the Stone-Čech compactification*, Integers **5(2)** (2005) #A04 1-26. (MR 2006k:54031)

(With D. Strauss) *Image partition regularity over the integers, rationals, and reals*, New York J. Math. **11** (2005) 519-538. (MR 2006h:05232)

Algebra in the Stone-Čech compactification and its applications to Ramsey Theory, Sci. Math. Jpn. **62** (2005), 321-329. (MR 2007e:54033)

(With T. Carlson and D. Strauss) *Discrete n-tuples in Hausdorff spaces*, Fundamenta Mathematicae **187** (2005), 111-126. (MR 2007k:54004)

The mathematics of Bruce Rothschild, J. Comb. Theory (Series A), **113** (2006), 2-20. (MR 2006h:05001)

(With I. Leader and D. Strauss) *Forbidden distances in the rationals and the reals*. J. London Math. Soc. **73** (2006), 273-286. (MR 2007b:05026)

(With M. Beiglböck, V. Bergelson, and D. Strauss) *Multiplicative structures in additively large sets*, J. Comb. Theory (Series A) **113** (2006), 1219-1242. (MR 2007f: 05174)

(With T. Carlson and D. Strauss) *An infinitary extension of the Graham-Rothschild Parameter Sets Theorem*, Trans. Amer. Math. Soc. **358** (2006), 3239-3262. (MR 2007g:05178)

(With I. Leader) *Nonconstant monochromatic solutions to systems of linear equations*, in Topics in Discrete Mathematics, Springer, Berlin, (2006), 145-154. (MR 2007g:05182)

(With D. Strauss) *Density in arbitrary semigroups*, Semigroup Forum **73** (2006), 273-300. (MR2280825)

(With H. Jordan) *Measures of sum-free intersecting families*, New York J. Math. **13** (2007), 97-106. (MR 2008f:11028)

(With D. Strauss) *Discrete groups in $\beta\mathbb{N}$*, Topology and its Applications **154** (2007), 2099-2103. (MR 2008b:54042)

Partition regularity of matrices, in Combinatorial Number Theory, B. Landman, M. Nathanson, J. Nešetřil, R. Nowakowski, and C. Pomerance, editors, deGruyter, Berlin, 2007, 265-298. Also published as Integers **7(2)** (2007), A-18.
`http://www.integers-ejcnt.org/vol7-2.html` (MR 2337052)

(With I. Moshesh) *Image partition regularity of affine transformations*, J. Comb. Theory (Series A) **114** (2007), 1375-1393. (MR 2360676)

(With D. Strauss) *Characterization of simplicity and cancellativity in βS*, Semigroup Forum **75** (2007), 70-76. (MR 2351924)

(With S. Burns) *Quasi-central sets and their dynamical characterization*, Topology Proceedings **31** (2007), 445-455. (MR2476623)

(With M. Beiglböck, V. Bergelson, and D. Strauss) *Some new results in multiplicative and additive Ramsey Theory*, Trans. Amer. Math. Soc. **360** (2008), 819-847. (MR 2346473)

(With T. Carlson, J. McLeod, and D. Strauss) *Almost disjoint large subsets of semigroups*, Topology and its Applications **155** (2008), 433-444. (MR2380928)

(With C. Adams and D. Strauss) *Largeness of the set of finite products in a semigroup*, Semigroup Forum **76** (2008), 276-296. (MR2377590)

(With D. De and D. Strauss) *A new and stronger Central Sets Theorem*, Fundamenta Mathematicae **199** (2008), 155-175. (MR2410923)

(With D. Strauss) *Bases for commutative semigroups and groups*, Math. Proc. Cambr. Phil. Soc. **145** (2008), 579-586. (MR2464776)

(With S. Ferri and D. Strauss) *Digital representation of semigroups and groups*, Semigroup Forum **77** (2008), 36-63. (MR2413260)

(With D. De and D. Strauss) *Sets central with respect to certain subsemigroups of βS_d*, Topology Proceedings, **33** (2009), 55-79. (MR2471562)

(With D. De) *Image partition regularity near zero*, Discrete Math. **309** (2009), 3219-3232. (MR2526740)

Small sets satisfying the Central Sets Theorem in Combinatorial Number Theory, B. Landman, M. Nathanson, J. Nešetřil, R. Nowakowski, C. Pomerance, and A. Robertson, editors, deGruyter, Berlin, 2009, 57-64. Also published as Integers **9**(Supplement) (2007), Article 5.
`http://www.integers-ejcnt.org/vol9supp.html` (MR2521953)

(With D. Strauss) *A simple characterization of sets satisfying the Central Sets Theorem*, New York J. Math. **15** (2009), 405-413. (MR2538625)

The Research of thirteen students at Howard University, Topology and its Applications **156** (2009), 2550-2559. (MR2561205)

(With D. Strauss) *Density and invariant means in left cancellative left amenable semigroups*, Topology and its Applications **156** (2009), 2614-2628. (MR2561213)

(With D. Strauss) *Sets satisfying the Central Sets Theorem*, Semigroup Forum **79** (2009), 480-506. (MR2564059)

(With D. Strauss) *Homomorphisms on compact subsets of βS*, African Diaspora J. Math. **8** (2009), 125-136. (MR2530117)

(With D. Strauss) *Cartesian products of sets satisfying the Central Sets Theorem*, Topology Proceedings **35** (2010), 203-223. (MR2534785)

(With D. Strauss) *Subsemigroups of βS containing the idempotents*, Topology Proceedings **35** (2010), 233-246. (MR2545025)

(With D. Strauss) *More discrete copies of $\mathbb{Z}$ in $\beta\mathbb{N}$*, Topology and its Applications **157** (2010), 2145-2156. (MR2665238)

(With D. Strauss) *Algebra in the space of ultrafilters and Ramsey Theory*, Contemporary Math. **530** (2010), 121-145. (MR2757535)

(With D. Strauss) *Some combinatorially defined subsets of $\beta\mathbb{N}$ and their relation to the idempotents*, J. Comb. Theory (Series A) **118** (2011), 373-386. (MR2739490)

Monochromatic sums equal to products in $\mathbb{N}$, Integers **11A** (2011), Article 10. `http://integers-ejcnt.org/vol11a.html` (MR2988070)

(With V. Bergelson and D. Strauss) *Polynomials at iterated spectra near zero*, Topology and its Applications **158** (2011), 1815-1830. (MR2823693)

(With L. Legette and D. Strauss) *The number of minimal left and minimal right ideals in βS*, Topology Proceedings **39** (2012), 45-68. (MR2793228)

(With V. Bergelson) *Quotient sets and density recurrent sets*, Trans. Amer. Math. Soc. **364** (2012), 4495-4531. (MR2922599)

(With V. Bergelson and D. Strauss) *Strongly central sets and sets of polynomial returns mod 1* , Proc. Amer. Math. Soc. **140** (2012), 2671-2686. (MR2910755)

(With J. Steprāns and D. Strauss) *Semigroups in which all strongly summable ultrafilters are sparse*, New York J. Math. **18** (2012), 835-848. (MR2991425)

(With J. Johnson) *Images of C sets and related large sets under nonhomogeneous spectra*, Integers **12A** (2012), Article 2.
`http://integers-ejcnt.org/vol12b.html` (MR3055676)

(With D. Strauss) *The center and extended center of the maximal groups in the smallest ideal of $\beta\mathbb{N}$*, Topology Proceedings **42** (2013), 107-119. (MR2979964)

(With D. Strauss and Y. Zelenyuk) *Longer chains of idempotents in βG*, Fund. Math. **220** (2013), 243-261. (MR3040673)

(With M. Bucci, S. Puzynina, and L. Zamboni) *On additive properties of sets defined by the Thue-Morse word*, J. Comb. Theory (Series A) **120** (2013), 1235-1245. (MR3044540)

(With D. Phulara) *Some new additive and multiplicative Ramsey numbers* J. Combinatorics **4** (2013), 81-93. (MR3064043)

(With B. Barber and I. Leader) *Partition regularity in the rationals*, J. Comb. Theory (Series A) **120** (2013), 1590-1599. (MR3092686)

(With H. Jordan) *On the size of minimal Hales-Jewett sets*, Scientiae Mathematicae Japonicae **76** (2013), 195-207. (MR3330067)

(With E. Tressler) *The first non-trivial Hales-Jewett number is four*, Ars Combinatoria **113** (2014), 385-390. (MR3186481)

(With L. Jones) *Idempotents in βS that are only products trivially*, New York J. Math. **20** (2014), 57-80. (MR3159396)

(With D. Davenport, I. Leader, and D. Strauss) *Multiply partition regular matrices*, Discrete Math. **322** (2014), 61-68. (MR3164038)

(With D. Gunderson and H. Lefmann) *Some partition theorems for infinite and finite matrices*, Integers **14** (2014), Article A12.
`http://www.integers-ejcnt.org/vol14.html` (MR3239593)

(With V. Bergelson and K. Williams) *Polynomial extensions of the Milliken-Taylor Theorem*, Trans. Amer. Math. Soc. **366** (2014), 5727-5748. (MR 3256182)

(With D. Strauss), *Separating Milliken-Taylor systems in $\mathbb{Q}$*, J. Combinatorics **5** (2014), 305-333. (MR3274959)

(With B. Barber, I. Leader, and D. Strauss) *Distinguishing subgroups of the rationals by their Ramsey properties*, J. Comb. Theory (Series A) **129** (2014), 93-104. (MR3275116)

(With L. Jones and M. Peters) *Left large subsets of free semigroups and groups that are not right large*, Semigroup Forum **90** (2015), 374-385. (MR3318271)

(With I. Leader and D. Strauss) *Extensions of infinite partition regular systems*, Electronic J. Comb. **22(2)** (2015), #P2.29. (MR3359932)

(With B. Barber, I. Leader, and D. Strauss) *Partition regularity without the columns property*, Proc. Amer. Math. Soc. **143** (2015), 3387-3399. (MR3348781)

(With K. Pleasant), *Preserving positive integer images of matrices*, New York J. Math. **22** (2016), 1021-1037. (MR3576280)

(With D. Strauss), *Separating linear expressions in the Stone-Čech compactification of direct sums*, Topology and its Applications **213** (2016), 199-211. (MR3563080)

(With D. Strauss), *Topological properties of some algebraically defined subsets of* $\beta\mathbb{N}$, Topology and its Applications **220** (2017), 43-49. (MR3619279)

(With D. Strauss), *The scarcity of products in* $\beta S \setminus S$, Topology and its Applications **220** (2017), 50-64. (MR3619280)

(With D. Strauss and I. Leader), *Duality for image and kernel partition regularity of infinite matrices*, J. Combinatorics **8** (2017), 653-672. (MR3682395)

(With I. Leader and D. Strauss), *Pairwise sums in colourings of the reals*, Abh. Math. Semin. Univ. Hambg. **87** (2017), 275-287. (MR3696151)

(With D. Strauss), *Infinite compact sets of idempotents in* βS, Semigroup Forum **95** (2017), 415-417. (MR3715850)

(With D. Strauss), *Long increasing chains of idempotents in* βG, Fund. Math. **240** 2018, 1-13. (MR3720916)

(With D. Strauss and L. Zamboni), *Recurrence in the dynamical system* $(X, \langle T_s \rangle_{s\in S})$ *and ideals of* βS, Indagationes Mathematicae **29** (2018), 293-312. (MR3739619)

(With K. Pleasant), *Preserving integer images of matrices*, Integers, **18b** (2018), Article A5. (MR3794018)

Recent results on partition regularity of infinite matrices, in Connections in Discrete Mathematics, S. Butler, J. Cooper, and G. Hurlbert, editors, Cambridge University Press, Cambridge, 2018, 200-213.

Research of Wis Comfort on ultrafilters and the Stone-Čech compatification, Topology and its Applications, to appear. (Accepted 1/15/18)

(With L. Jones and D. Strauss), *The relationships among many notions of largeness for subsets of a semigroup*, Semigroup Forum, to appear. (Accepted 3/5/18)

A history of central sets, Ergodic Theory and Dynamical Systems, to appear. (Accepted 4/19/18)

(With D. Strauss), *Image partition regularity of matrices over commutative semigroups*, Topology and its Applications, to appear. (Accepted 7/10/18)

TEXTBOOK:

(With C. Gordon) *Elementary set theory – proof techniques*, Hafner Press, New York, 1975.

RESEARCH MONOGRAPHS:

(With D. Strauss) *Algebra in the Stone-Čech compactification – theory and applications*, Walter de Gruyter & Co., Berlin, 1998. (MR 99j:54001; Also reviewed: Semigroup Forum **59** (1999), 310-314.)

(With D. Strauss) *Algebra in the Stone-Čech compactification – theory and applications, second revised and extended edition*, Walter de Gruyter & Co., Berlin, 2012.

GRANTS ADMINISTERED:

Combinatorics: partition theory and refining families, National Science Foundation, MCS 7606995. June 1, 1976 – November 30, 1977.

Partition theory: sums, products, and ultrafilters, National Science Foundation, MCS 7802330. July 1, 1978 – December 31, 1980.

Ultrafilters and combinatorial partition theory, National Science Foundation, MCS 8100733. June 1, 1981 – November 30, 1984.

Ultrafilter combinatorics: Ramsey Theory and semigroups, National Science Foundation, DMS 8320383 and DMS 8520873. June 1, 1984 – November 30, 1988.

Combinatorics: ultrafilters, semigroups, and Ramsey Theory, National Science Foundation, DMS 8901058 and DMS 9025025. June 1, 1989 – May 31, 1995.

Ramsey Theory, the theory of compact left topological semigroups, and their interactions, National Science Foundation, DMS 9424421. June 1, 1995 – May 31, 1998.

Semigroup algebra at infinity and its combinatorial applications, National Science Foundation, DMS 0070593 and DMS 0243586. July 1, 2000 – June 30, 2006.

Algebra in Stone-Čech compactifications and its combinatorial applications, National Science Foundation, DMS-0554803 and DMS-0852512. July 1, 2006 – June 30, 2012.

Ramsey Theory: Central sets and related combinatorially rich sets, National Science Foundation, DMS-1160566 and DMS-1460023. July 1, 2012 – June 30, 2015 and September 1, 2015 – June 30, 2017.

DOCTORAL DISSERTATIONS DIRECTED:

Dennis E. Davenport, *The algebraic properties of closed semigroups of ultrafilters on a discrete semigroup*, Howard University, 1987.

Hanson M. Umoh, *The ideal of products in $\beta S \backslash S$*, Howard University, 1987.

Amha Tume Lisan, *The ideal structure of the space of ultrafilters on a discrete semigroup*, Howard University, 1988.

Patty J. Anthony, *Ideals in the Stone-Čech compactification of noncommutative semigroups*, Howard University, 1994.

Gregory L. Smith, *Partition regularity of sums of products of natural numbers*, Howard University, 1994.

Dan Tang, *Separating sums from products in* $\mathbb{N}$, Howard University, 1997.

Elaine Terry, *Finite sums and products in Ramsey Theory*, Howard University, 1997.

Shea D. Burns, *The existence of disjoint smallest ideals in the left continuous and right continuous structures in the Stone-Čech compactification of a semigroup*, Howard University, 2000.

Jillian E. McLeod, *Notions of size in adequate partial semigroups*, Howard University, 2001.

Iris Gugu Moche, *The sizes of preimages of points under the natural map from* $K\big(\beta(\mathbb{N}\times\mathbb{N})\big)$ *to* $K(\beta\mathbb{N})\times K(\beta\mathbb{N})$, Howard University, 2002.

Irene S. Moshesh, *Image partition regularity of affine transformations*, Howard University, 2006.

Chase G. Adams, III, *Largeness of the set of finite sums of sequences in* $\mathbb{N}$, Howard University, 2006.

Lakeshia R. Legette, *Maximal groups in the Stone-Čech compactification of a discrete semigroup*, Howard University, 2008.

Kendall Williams, *Separating Milliken-Taylor systems and variations theoreof in the dyadics and the Stone-Čech compactification of* $\mathbb{N}$, Howard University, 2010.

John H. Johnson, *Some differences between an ideal in the Stone-Čech compactification of commutative and noncommutative semigroups*, Howard University, 2011.

Henry Jordan, *Minimal Hales-Jewett sets*, Howard University, 2011.

Kourtney Fulton Miller, *Continuous homomorphisms from* βS *to* S^*, Howard University, 2013.

Monique A. Peters, *Characterizing differences between the left and right operations on* βS, Howard University, 2013.

Dev Phulara, *A generalization of the Central Sets Theorem with applications and some additive and multiplicative Ramsey numbers*, Howard University, 2014.

Kendra Pleasant, *Some new results in Ramsey Theory*, Howard University, 2017.