

DUKE UNIVERSITY MEDICAL CENTER

CURRICULUM VITAE

For Permanent Record and the Appointments and Promotions Committee

Date Prepared: July 2, 2024

Name: Laura E. Schanberg, M.D.

Primary Academic Appointment: Professor with tenure

Primary Academic Department: Department of Pediatrics

Secondary Appointment: Faculty, Duke Clinical Research Institute

Present Academic Rank and Title: Professor of Pediatrics with tenure

Date and Rank of First Duke Faculty Appointment: 1991, Associate

Medical Licensure: North Carolina License

Specialty certification(s) and dates: Pediatrics: April 16, 1989
Recertification: January 12, 1999
Pediatric Rheumatology: 1992
Recertification: October 27, 2006
American Board of Pediatrics
Maintenance of Certification: December 17, 2013 – 2016, Dec 09, 2018 – Dec 21, 2023

Citizen of: United States of America

Education	Institution	Date	Degree
College	Harvard College Cambridge, MA	1980	B.A.
Professional School	Duke University School of Medicine, Durham, NC	1984	M.D.
Continuing Education	Physician Executive Leadership Program, Durham, NC	1999	Non-degree

Continuing Education	Good Clinical Practice Training, Duke University Medical Center, Durham, North Carolina	2007	Non-degree
Continuing Education	The Chancellor's Clinical Leadership in Academic Medicine Program	2010	Non-degree
DEI Continuing Education	Teaching and Leading for Equity	2021	Non-degree

Professional Training and Academic Career:

Institution	Position/Title	Dates
Duke University Medical Center	Pediatric Resident	1984 – 1987
Duke University Medical Center	Pediatric Rheumatology Clinical Fellow	1987 – 1988
Duke University Medical Center	Research Fellow	1988 – 1991
Duke University Medical Center	Associate in Pediatrics	1991 – 1996
UNC Hospitals	Clinical Assistant Professor	1994 – present
Duke University Medical Center	Assistant Professor	1996 – 2002
Duke University Medical Center	Co-Chair, Duke Pain and Palliative Care Initiative	1997 – 2000
Duke University Medical Center	Associate Director, Duke Pain and Palliative Care Program	2000 – 2003
Duke Children's Health Center	Medical Director, Duke Pediatric Pain Clinic	2000 – 2015
Duke Institute on Care at the End of Life	Associate Faculty Scholar	2000 – present
Duke University Medical Center	Program Director, Duke-UNC Pediatric Rheumatology Fellowship Training	2001 – 2009
Duke University Medical Center	Program Director, Medicine-Pediatric Rheumatology Fellowship Training Program	2002 – 2009
Duke Clinical Research Institute	Faculty	2000 – present
Duke University Medical Center	Associate Professor, Division of Pediatric Rheumatology	2002 – 2005

Duke University Medical Center	Co-Director, Lupus Clinical Trials Consortium Center	2003 – 2006
Duke University Medical Center	Co-Chief, Division of Pediatric Rheumatology	2004 – 2017
Duke University Medical Center	Associate Professor with tenure, Division of Pediatric Rheumatology	2005 – 2009
Duke University Medical Center	Professor with tenure, Division of Pediatric Rheumatology	2010 – present
Duke Clinical Research Institute	Co-Director, Immunology and Inflammation Medicine	2012 – present

Publications:

Refereed Journals

1. **Schanberg LE**, Fleenor DE, Kurtzberg J, Haynes BF, Kaufman RE. Isolation and characterization of the genomic human CD7 gene: structural similarity with the murine Thy-1 gene. Proc Natl Acad Sci U S A. 1991 Jan 15;88(2):603-7. PMID: 1703303
2. **Schanberg LE**, Lee, D, Fleenor, DE, Ware, RE, Patel, DD, Haynes, BF, and Kaufman, RE Characterization of human CD7 transgenic mice. J Immunol. 155(5):2407-2418, 1995. PMID: 7544374
3. **Schanberg LE**, Keefe, FJ, Lefebvre, JC, Kredich, DW & Gil, KM. Pain coping strategies in children with juvenile primary fibromyalgia syndrome: correlation with pain, physical function, and psychological distress. Arthritis Care Res. 9:89-96, 1996. PMID: 8970266
4. Lee, DM, **Schanberg LE**, Fleenor, DE, Seldin, MF, Haynes, BF, & Kaufman, RE. The mouse CD7 gene: Identification of a new element common to the human CD7 and mouse Thy-1 promoters. Immunogenetics 44:108-114, 1996. PMID: 8662072
5. **Schanberg LE**, Keefe, F.J., Lefebvre, J.C., Kredich, D.W. & Gil, K.M. Pain Coping and the Pain Experience in Children with Juvenile Chronic Arthritis. Pain 73:181-189, 1997. PMID: 9415504
6. **Schanberg LE**, Keefe, F.J., Lefebvre, J.C., Kredich, D.W. & Gil, K.M. Social Context of Pain in Children with Juvenile Primary Fibromyalgia Syndrome: Parental Pain History and Family Environment. Clin. J. Pain 14:107-115, 1998. PMID: 9647451
7. Sherry, D.D., Stein, L.D., Reed, A.M., **Schanberg LE**, & Kredich, D.W. Prevention

of leg length discrepancy in young children with pauciarticular juvenile rheumatoid arthritis by intraarticular steroids. *Arthritis Rheum* 42(11):2330-2334, 1999. PMID: 10555028

8. **Schanberg LE**, Sandstrom, M.J., Starr, K., Gil, K.M. Lefebvre, J.C., Keefe, F.J., Affleck, G. & Tennen, H. The relationship of daily mood and stressful events to symptoms in juvenile rheumatic disease. *Arthritis Care Res.* 13(1):33-41, 2000. PMID: 11094924
9. Higginbotham, E.A., Zimmerman, S.A., Howard, T.A., **Schanberg LE**, Kredich, D.W. & Ware, R.E. Effects of inherited thrombophilic mutations in an adolescent with antiphospholipid syndrome and systemic lupus erythematosus. *J Rheumatol*, 28:370-372, 2001. PMID: 11246680
10. **Schanberg LE**, Anthony, K., Gil, K.M., Lefebvre, J.C., Kredich, D.W., & Macharoni, L. Family pain history predicts child health status in children with chronic rheumatic disease. *Pediatrics* 108(3): E47, 2001. PMID: 11533365
11. Voynow, J.A., **Schanberg LE**, Sporn, T. & Kredich, D.W. Pulmonary Complications Associated with Kawasaki Disease. *J Pediatr* 140(6):786-7, 2002. PMID:12072892
12. Anthony, K.K., Gil, K.M., & **Schanberg LE**, Brief Report: Parental perceptions of child vulnerability in children with chronic illness, *J Pediatr Psychol* 28(3): 185-190, 2003. PMID: 12654943
13. **Schanberg LE**, Anthony, K.K., Gil, K.M., & Maurin, E. Daily pain and symptoms in children with polyarticular arthritis. *Arthritis Rheum.* 2003 May;48(5):1390-1397. PMID: 12746912
14. Anthony K.K. & **Schanberg LE**, Pain in children with arthritis: a review of the current literature. *Arthritis Rheum* 49(2): 272-279, 2003. Review. PMID: 12687523
15. Sandstrom, M.J. & **Schanberg LE**, Peer rejection, social behavior and psychological adjustment in children with juvenile rheumatic disease. *J Pediatr Psychol.* 2004 Jan-Feb; 29(1):29-34. PMID: 14747363
16. Silverman E. Spiegel L. Hawkins D. Petty R. Goldsmith D. **Schanberg LE**, Duffy C. Howard P. Strand V. Long-term open-label preliminary study of the safety and efficacy of leflunomide in patients with polyarticular-course juvenile rheumatoid arthritis. *Arthritis Rheum* 52(2):554-62, 2005. PMID: 15693001
17. Sathornsumetee S., **Schanberg LE**, Rabinovich E, Lewis D Jr, Weisleder P. Parry-Romberg syndrome with fatal brain stem involvement. *J Pediatr* 46(3):429-31, 2005. PMID: 157562372016
18. **Schanberg LE**, Gil KM. Anthony KK. Yow E. Rochon J. Pain, stiffness, and fatigue in juvenile polyarticular arthritis: contemporaneous stressful events and mood as

predictors. *Arthritis Rheum.* 2005 Apr;52(4):1196-204. PMID: 15818661

19. Kimura Y, Walco GA, Sugarman E, Conte PM, **Schanberg LE**, Treatment of pain in juvenile idiopathic arthritis: a survey of pediatric rheumatologists. *Arthritis Rheum.* 2006 Feb 15;55(1): 81-85. PMID: 16463417
20. Connelly M. and **Schanberg LE**, Opioid therapy for the treatment of refractory pain in pediatric rheumatoid disease. *Nat Clin Pract Rheumatol.* 2(12):636-7, 2006. PMID: 17133244
21. Ardoin SA, Kredich D, Rabinovich E, **Schanberg LE**, Jaffe GJ. Infliximab to treat chronic noninfectious uveitis in children: retrospective case series with long-term follow-up. *Am J Ophthalmol* 144(6):844-849, 2007. Epub Oct 22. PMID: 17953940
22. Mikdashi J, Esdaile JM, Alarcón GS, Crofford L, Fessler BJ, **Schanberg LE**, Gall V, Kalden JR, Lockshin MD, Liang MH, Roberts N, Jr., Schneider M, Ad Hoc Committee On Lupus Response Criteria: Cognition sub-committee. Proposed Response Criteria for Neurocognitive Impairment in Systemic Lupus Erythematosus Clinical Trials. *Lupus.* 16(6):418-425, 2007. PMID: 17664232
23. Sandborg C., Ardoin SP., **Schanberg LE**, Therapy Insight: cardiovascular disease in pediatric systemic lupus erythematosus. *Nat Clin Pract Rheumatol.* 4(5):258-265, 2008. PMID: 18349862
24. Ota S, Cron RQ, **Schanberg LE**, O'Neil K, Mellins ED, Fuhlbrigge RC, Feldman BM. Research priorities in pediatric rheumatology: The Childhood Arthritis and Rheumatology Research Alliance (CARRA) consensus. *Pediatr Rheumatol Online J.* 2008 Apr 1;6:5. PMID: 18380905
25. Ota S., Cron R.Q., **Schanberg LE**, O'Neil K., Mellins E.D., Fuhlbrigge R.C., Feldman B.M. Research priorities in pediatric rheumatology: The Childhood Arthritis and Rheumatology Research Alliance (CARRA) consensus. *Pediatr Rheumatol Online J.* 2008 Apr 1;6:5. PMID: PMC2330140
26. **Schanberg LE**, Sandborg C, Barnhart HX, Ardoin SP, Yow E, Evans GW, Mieszkalski KL, Ilowite NT, Eberhard A, Levy DM, Kimura Y, von Scheven E, Silverman E, Bowyer SL, Punaro L, Singer NG, Sherry DD, McCurdy D, Klein-Gitelman M, Wallace C, Silver R, Wagner-Weiner L, Higgins GC, Brunner HI, Jung L, Soep JB, Reed A; Atherosclerosis Prevention in Pediatric Lupus Erythematosus Investigators. Premature atherosclerosis in pediatric systemic lupus erythematosus: risk factors for increased carotid intima-media thickness in the atherosclerosis prevention in pediatric lupus erythematosus cohort. *Arthritis Rheum.* 2009 May;60(5):1496-507. PMID: 19404953
27. **Schanberg LE**, Sandborg C,. Understanding Premature Atherosclerosis in Pediatric SLE: Risk Factors of Increased Carotid Intima Medial Thickness (CIMT) in the Atherosclerosis Prevention in Pediatric Lupus Erythematosus (APPLE) Cohort. *Arthritis Rheum.* 2009 May; 60(5):1496-1507. PMID: PMC2770725

28. Robinson AB, DeWitt EM, **Schanberg LE**, Moody MA. Necrotizing fasciitis caused by Haemophilus influenza type E in 17 year-old-girl with systemic lupus erythematosus. *J Clin Rheumatol*. 2010 Jan; 16(1):49-50. PMID: 20051761
29. Connelly M, Anthony KK, Sarniak R, Bromberg MH, Gil KM, **Schanberg LE**, Parent Pain Responses as Predictors of Daily Activities and Mood in Children with Juvenile Idiopathic Arthritis: The Utility of Electronic Diaries. *Journal of Pain and Symptom Management*. 2010 Mar;39(3):579-90. PMID: 20303032
30. Brunner HI, Klein-Gitelman M, Higgins G, Lapidus S, Levy D, Eberhard A, Singer N, Olson J, Onel K, Punaro M, **Schanberg LE**,. Toward the Development of Criteria for Global Flares in Juvenile Systemic Lupus Erythematosus. *Arthritis Care Res*. 2010 June;62(6):811-20. PMID: 20535792
31. Ardoin SP, **Schanberg LE**, Sandborg C, Yow E, Barnhart HX, Mieszkalski KL, Ilowite NT, von Scheven E, Eberhard A, Levy DM, Kimura Y, Silverman E, Bowyer SL, Punaro L, Singer NG, Sherry DD, McCurdy D, Klein-Gitelman M, Wallace C, Silver R, Wager-Weiner L, Higgins GC, Brunner HI, Jung LK, Imundo L, Soep JB, Reed AM; APPLE investigators. Laboratory markers of cardiovascular risk in pediatric SLE: the APPLE baseline cohort. *Lupus*. 2010 Oct;9(11): 1315-25. PMID:20861207
32. Brunner H, Mina R, Pilkington C, Beresford M, Reiff A, Levy D, Tucker L, Eberhard A, Ravelli A, **Schanberg LE**, Saad-Magalhaes C, Higgins G, Onel K, Singer N, von Scheven E, Itert L, Klein-Gitelman M, Punaro M, Ying Y, Giannini EH. Preliminary Criteria for Global Flares in Childhood-Onset Systemic Lupus Erythematosus. *Arthritis Care Res*. 2011 September; 63(9):1213-23. PMID: 21618452
33. Connelly M, Bromberg MH, Anthony KK, Gil KM, Franks L, **Schanberg LE**, Emotion Regulation Predicts Pain and Functioning in Children With Juvenile Idiopathic Arthritis: An Electronic Diary Study. *J Pediatr Psychol*. 2012 Jan-Feb;37(1):43-52. Epub 2011 Oct 27. PMID: 22037006;
34. Anthony KA, Bromberg MH, Gil KM, **Schanberg LE**, Parental perceptions of child vulnerability and parent stress as predictors of pain and adjustment in children with chronic arthritis. *Children's Health Care*. 40:53-69, 18 Feb 2011. PMID: 30148877
35. Berde CB, Walco GA, Krane EJ, Anand KJ, Aranda JV, Craig KD, Dampier CD, Finkel JC, Grabois M, Johnston C, Lantos J, Lebel A, Maxwell LG, McGrath P, Oberlander TF, **Schanberg LE**, Stevens B, Taddio A, von Baeyer CL, Yaster M, Zempsky WT. Pediatric analgesic clinical trial designs, measures, and extrapolation: report of an FDA scientific workshop. *Pediatrics*. 2012 Feb;129(2):354-64. Epub 2012 Jan 16. PMID: 22250028.
36. **Schanberg LE**, Sandborg, C, Barnhart HX, Ardoin SP, Yow E, Evans GW, Mieszkalski KL, Ilowite NT, Eberhard A, Imundo LF, Kimura Y, von Scheven E,

- Silverman E, Bowyer SL, Punaro L, Singer NG, Sherry DD, McCurdy D, Klein-Gitelman M, Wallace C, Silver R, Wagner-Weiner L, Higgins GC, Brunner HI, Jung L, Soep JB, Reed AM, Provenzale J, Thompson SD, for the APPLE investigators. Use of Atorvastatin in Systemic Lupus Erythematosus in Children and Adolescents. *Arthritis Rheum*. 2012 Jan;64(1):285-96. PMID: 22031171
37. Bromberg MH, Gil KM, **Schanberg LE**, Daily Sleep Quality and Mood as Predictors of Pain in Children with Juvenile Polyarticular Arthritis. *Health Psychol*. 2012 Mar;31(2):202-9. Epub 2011 Aug 15. PMID: 21842997
 38. Mina R, von Scheven E, Ardoin SP, Eberhard BA, Punaro M, Ilowite N, Hsu J, Klein-Gitelman M, Moorthy LN, Muscal E, Radhakrishna SM, Wagner-Weiner L, Adams M, Blier P, Buckley L, Chalom E, Chédeville G, Eichenfield A, Fish N, Henrickson M, Hersh AO, Hollister R, Jones O, Jung L, Levy D, Lopez-Benitez J, McCurdy D, Miettunen PM, Quintero-del Rio AI, Rothman D, Rullo O, Ruth N, **Schanberg LE**, Silverman E, Singer NG, Soep J, Syed R, Vogler LB, Yalcindag A, Yildirim-Toruner C, Wallace CA, Brunner HI; Carra SLE Subcommittee. Consensus treatment plans for induction therapy of newly diagnosed proliferative lupus nephritis in juvenile systemic lupus erythematosus. *Arthritis Care Res (Hoboken)*. 2012 Mar;64(3):375-83. PMID: 22162255.
 39. Stinson JN, Connelly M, Jibb LA, **Schanberg LE**, Walco G, Spiegel LR, Tse SM, Chalom EC, Chira P, Rapoff M. Developing a standardized approach to the assessment of pain in children and youth presenting to pediatric rheumatology providers: a Delphi survey and consensus conference process followed by feasibility testing; *Pediatr Rheumatol Online J*. 2012 Apr 10;10(1):7. PMID: 22490427
 40. Connelly M, Anthony KK, **Schanberg LE**, Parent perceptions of child vulnerability are associated with functioning and health care use in children with chronic pain. *J Pain Symptom Manage*. 2012 May;43(5):953-60. Epub 2012 Jan PMID: 22285288.
 41. Mina R, Klein-Gitelman MS, Ravelli A, Beresford MW, Avcin T, Espada G, Eberhard BA, **Schanberg LE**, O'Neil KM, Silva CA, Higgins GC, Onel K, Singer NG, von Scheven E, Imundo LF, Nelson S, Giannini EH, Brunner HI. Inactive disease and remission in childhood-onset systemic lupus erythematosus. *Arthritis Care Res (Hoboken)*. 2012 May;64(5):683-93. PMID: 22238253;
 42. Wallace CA, Giannini EH, Spalding SJ, Hashkes PJ, O'Neil KM, Zeff AS, Szer IS, Ringold S, Brunner HI, **Schanberg LE**, Sundel RP, Milojevic D, Punaro MG, Chira P, Gottlieb BS, Higgins GC, Ilowite NT, Kimura Y, Hamilton S, Johnson A, Huang B, Lovell DJ; Childhood Arthritis and Rheumatology Research Alliance. Trial of early aggressive therapy in polyarticular juvenile idiopathic arthritis. *Arthritis Rheum*. 2012 Jun;64(6):2012-21 Epub 2011 Dec 19. PMID: 22183975
 43. Ilowite NT, Sandborg CI, Feldman BM, Grom A, **Schanberg LE**, Giannini EH,

- Wallace CA, Schneider R, Kenney K, Gottlieb B, Hashkes PJ, Imundo L, Kimura Y, Lang B, Miller M, Milojevic D, O'Neil KM, Punaro M, Ruth N, Singer NG, Vehe RK, Verbsky J, Woodward A, Zemel L. Algorithm development for corticosteroid management in systemic juvenile idiopathic arthritis trial using consensus methodology. *Pediatr Rheumatol Online J*. 2012 Aug 29;10(1):31. PMID: 22931206
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 45. Weiss PF, Beukelman T, **Schanberg LE**, Kimura Y, Colbert RA; CARRA Registry Investigators. Enthesitis-related arthritis is associated with higher pain intensity and poorer health status in comparison with other categories of juvenile idiopathic arthritis: the Childhood Arthritis and Rheumatology Research Alliance Registry. *J Rheumatol*. 2012 Dec;39(12):2341-51. Epub 2012 Oct 15. PMID: 23070991.
 46. Natter MD, Quan J, Ortiz DM, Bousvaros A, Ilowite NT, Inman CJ, Marsolo K, McMurry AJ, Sandborg CI, **Schanberg LE**, Wallace CA, Warren RW, Weber GM, Mandl KD. An i2b2-based, generalizable, open source, self-scaling chronic disease registry. *J Am Med Inform Assoc*. 2013 Jan 1;20(1):172-9. Epub 2012 Jun 25. PMID: 22733975.
 47. Valrie CR, Bromberg MH, Palermo T, **Schanberg LE**, A systematic review of sleep in pediatric pain populations. *J Dev Behav Pediatr*. 2013 Feb;34(2):120-8. PMID: 23369958.
 48. SP Ardoin, **Schanberg LE**, C I Sandborg, HX Barnhart, GW Evans, E Yow, KL Mieszkalski, NT Ilowite, A Eberhard, LF Imundo, Y Kimura, D Levy, E von Scheven, Earl Silverman, SL Bowyer, L Punaro, NG Singer, DD Sherry,DK McCurdy, M Klein-Gitelman, C Wallace, RM Silver, L Wagner-Weiner, GC Higgins, HI Brunner, L Jung, JB Soep, AM Reed, SD Thompson, for the APPLE investigators. Secondary analysis of APPLE study suggests atorvastatin may reduce atherosclerosis progression in pubertal lupus patients with higher C reactive protein. *Ann Rheum Dis*. 2013 Feb 22. [Epub ahead of print] PMID: 23436914.
 49. Wahezi DM, Ilowite NT, Wu XX, Pelkmans L, Laat B, **Schanberg LE**, Rand JH; Atherosclerosis Prevention in Pediatric Lupus Erythematosus Investigators. Annexin A5 anticoagulant activity in children with systemic lupus erythematosus and the association with antibodies to domain I of β 2-glycoprotein I. *Lupus*. 2013;22(7):702-11. Epub 2013 May 20. PMID: 23690366.

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51. Lionetti G, Kimura Y, **Schanberg LE**, Beukelman T, Wallace CA, Ilowite NT, Winsor J, Fox K, Natter M, Sundy JS, Brodsky E, Curtis JR, Del Gaizo V, Iyasu S, Jahreis A, Meeker-O'Connell A, Mittleman BB, Murphy BM, Peterson ED, Raymond SC, Setoguchi S, Siegel JN, Sobel RE, Solomon D, Southwood TR, Vesely R, White PH, Wulffraat NM, Sandborg CI. Using Registries to Identify Adverse Events in Rheumatic Diseases. Pediatrics 2013; PMID: 24144710
52. Bromberg MH, Connelly M, Anthony KK, Gil KM, **Schanberg LE**, Self-reported pain and disease symptoms persist in juvenile idiopathic arthritis despite treatment advances: an electronic diary study. Arthritis Rheumatol 2014 Feb;66(2):462-9. PMID:24504820.
53. Robinson AB, Tangpricha V, Yow E, Gurion R, McComsey GA, **Schanberg LE**, APPLE Investigators. Vitamin D deficiency is common and associated with increased C-reactive protein in children and young adults with lupus: an Atherosclerosis Prevention in Pediatric Lupus Erythematosus substudy. Lupus Sci Med. 2014 Apr 30;1(1):e000011. PMID: 25396060.
54. Bromberg, M. H., Schechter, N. L., Nurko, S., Zempsky, W. T., & **Schanberg LE**. Persistent pain in chronically ill children without detectable disease activity. Pain Management, 2014 May;4(3):211-9. PMID: 24953073.
55. Wallace CA, Giannini EH, Spalding SJ, Hashkes PJ, O'Neil KM, Zeff AS, Szer IS, Ringold S, Brunner HI, **Schanberg LE**, Sundel RP, Milojevic DS, Punaro MG, Chira P, Gottlieb BS, Higgins GC, Ilowite NT, Kimura Y, Johnson A, Huang B, Lovell DJ; Childhood Arthritis and Rheumatology Research Alliance (CARRA). Clinically inactive disease in a cohort of children with new-onset polyarticular juvenile idiopathic arthritis treated with early aggressive therapy: time to achievement, total duration, and predictors. J Rheumatol. 2014 Jun;41(6):1163-70. PMID: 24786928.
56. Ilowite NT, Prather K, Lokhnygina Y, **Schanberg LE**, Elder M, Milojevic D, Verbsky JW, Spalding SJ, Kimura Y, Imundo LF, Punaro MG, Sherry DD, Tarvin SE, Zemel LS, Birmingham JD, Gottlieb BS, Miller ML, O'Neil K, Ruth NM, Wallace CA, Singer NG, Sandborg CI. Randomized, double-blind, placebo-controlled trial of the efficacy and safety of riloncept in the treatment of systemic juvenile idiopathic arthritis. Arthritis Rheumatol. 2014 Sep;66(9):2570-9. PMID: 24839206; PMCID: PMC4314719.
57. Robinson AB, Tangpricha V, Yow E, Gurion R, **Schanberg LE**, McComsey GA; APPLE Investigators. Vitamin D status is a determinant of atorvastatin effect on

carotid intima medial thickening progression rate in children with lupus: an Atherosclerosis Prevention in Pediatric Lupus Erythematosus (APPLE) substudy. *Lupus Sci Med*. 2014 Sep 10;1(1):e000037. PMID: 25396067.

58. Wallace CA, Ringold S, Bohnsack J, Spalding SJ, Brunner HI, Milojevic D, **Schanberg LE**, Higgins GC, O'Neil KM, Gottlieb BS, Hsu J, Punaro MG, Kimura Y, Hendrickson A. Extension study of participants from the trial of early aggressive therapy in juvenile idiopathic arthritis. *J Rheumatol*. 2014 Dec;41(12):2459-65. PMID: 25179849
59. Gurion R, Tangpricha V, Yow E, **Schanberg LE**, McComsey GA, Robinson AB, Atherosclerosis Prevention in Pediatric Lupus Erythematosus Investigators. Avascular necrosis in pediatric systemic lupus erythematosus: a brief report and review of the literature. *Pediatr Rheumatol Online J*. 2015 Apr 23;13(1):13. PMID: 25902709.
60. Bromberg MH, Connelly M, Anthony KK, Gil KM, **Schanberg LE**, Prospective Mediation Models of Sleep, Pain and Daily Function in Children with Arthritis using Ecological Momentary Assessment. *Clin J Pain*. 2015 Sep 3. PMID: 26340651.
61. Knight A, Vickery M, Muscal E, Davis A, Harris J, Soybilgic A, Onel K, **Schanberg LE**, Rubinstein T, Gottlieb BS, Group Author(s): CARRA Investigators. Current Provider Practices and Perceived Barriers for Mental Health Care of Adolescents with SLE. *Arthritis & Rheumatology*. 2015 Oct: 67:10. PMID: 27036378
62. Jones JT, Carle AC, Wootton J, Liberio B, Lee J, **Schanberg LE**, Ying J, DeWitt EM, Brunner HI. Validation of Patient-Reported Outcomes Measurement Information System (PROMIS®) Short Forms for Use in Childhood-onset Systemic Lupus Erythematosus. *Arthritis Care Res (Hoboken)*. PMID: 27111350
63. Zahedi Niaki O, Clarke AE, Ramsey-Goldman R, Yeung R, Hayward K, Oen K, Duffy CM, Rosenberg A, O'Neil KM, von Scheven E, **Schanberg LE**, Labrecque J, Tse SM, Hasija R, Lee JL, Bernatsky S. Malignancy incidence in 5294 patients with juvenile arthritis. *RMD Open*. 2016 May 2 PMID: 27175293
64. Bromberg, MH, Connelly M, Anthony K, Gil KM, & **Schanberg LE**, Prospective mediation models of sleep, pain and daily function in children with arthritis using ecological momentary assessment, *Clinical Journal of Pain* 2016 Jun;32(6):471-7. PMID 26340651
65. Wu EY, **Schanberg LE**, Wershba EC, Rabinovich CE. Lenalidomide for refractory cutaneous manifestations of pediatric systemic lupus erythematosus. *Lupus*. 2017 May;26(6):646-649.. Epub 2016 Nov 12. PMID: 27837194
66. Nowell WB, Merkel PA, **Schanberg LE**, Curtis JR. Reenergizing Research While Improving Patient Care. *Provider*. 2016 June;42(6):37-8, 41, 43 passim. PMID:

27468461.

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68. Knight AM, Vickery ME, Muscal E, Davis AM, Harris JG, Soybilgic A, Onel KB, **Schanberg LE**, Rubinstein T, Gottlieb BS, Mandell DS, von Scheven E; CARRA Investigators. Identifying Targets for Improving Mental Healthcare of Adolescents with Systemic Lupus Erythematosus: Perspectives from Pediatric Rheumatology Clinicians in the United States and Canada. *The Journal of Rheumatology* 43(6) 1136-1145. PMID: 27036378.
69. Janow G, **Schanberg LE**, Setoguchi S, Hasselblad V, Mellins ED, Schneider R, Kimura Y, CARRA Legacy Registry Investigators. The systemic Juvenile Idiopathic Arthritis Cohort of the Childhood Arthritis and Rheumatology Research Alliance Registry: 2010-2013. *J Rheumatol.* 2016 August 43:9. PMID: 27307527.
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Letters

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Inception Cohorts [abstract]. *Arthritis Rheumatol.* 2020; 72 (suppl 4). <https://acrabstracts.org/abstract/patients-with-juvenile-idiopathic-arthritis-in-the-childhood-arthritis-and-rheumatology-research-alliance-carra-registry-clinical-characteristics-and-inception-cohorts/>. Accessed August 1, 2020.

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93. Ciurtin C, Peng J, Donnes P, Ardoin S, **Schanberg L**, Lewandowski L, Robinson G, Jury E. Re-analysis of the APPLE (Atherosclerosis Prevention in Paediatric Lupus Erythematosus) Trial Identifies Novel Determinants of Patient Heterogeneity and a Distinct Lipid Metabolomic Signature of Atherosclerosis Progression [abstract]. *Arthritis Rheumatol.* 2023; 75 (suppl 4). <https://acrabstracts.org/abstract/re-analysis-of-the-apple-atherosclerosis-prevention-in-paediatric-lupus-erythematosus-trial-identifies-novel-determinants-of-patient-heterogeneity-and-a-distinct-lipid-metabolomic-signature-of-ather/>. Accessed July 2, 2023.
94. Taxter A, Natter M, Chang M, **Schanberg L**, Morrow V, Wu E, Bumpass T, Fist A, Waite M, Del Gaizo V, Kohlheim M, Investigators C. Development of an Electronic Clinical Phenotype to Identify Potential Study Subjects with Juvenile Arthritis [abstract]. *Arthritis Rheumatol.* 2023; 75 (suppl 4).

<https://acrabstracts.org/abstract/development-of-an-electronic-clinical-phenotype-to-identify-potential-study-subjects-with-juvenile-arthritis/>. Accessed July 2, 2023.

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<https://acrabstracts.org/abstract/facilitating-peer-to-peer-conversations-around-key-clinical-trial-recruitment-barriers-in-the-limit-jia-trial-using-low-fidelity-video-capture/>. Accessed July 2, 2023.

Non-refereed Publications

1. **Schanberg LE**, & Sandstrom MJ. Causes of Pain In Children With Arthritis. *Rheum Dis Clinics NA* 25:31-53, 1999. Review. PMID: 10083958
2. Anthony K & **Schanberg LE**, Juvenile Primary Fibromyalgia Syndrome. *Curr Rheumatol Rep* 3(2):165-171, 2001. Review. PMID: 11286673
3. Kulas DT and **Schanberg LE**, Juvenile Idiopathic Arthritis. *Curr Opin Rheumatol* 13:392-398, 2001. PMID: 11604594
4. Manzi S, Sabatine JM, **Schanberg LE**, Is Your Child at Risk? Atherosclerotic heart disease in young people with lupus. *Lupus News*, 22(3), 2002.
5. **Schanberg LE**, Sandborg C. Dyslipoproteinemia And Atherosclerosis In Children With Lupus. *Curr Rheumatol Rep*. 2004 Dec;6(6):425-433. Review. PMID: 15527701
6. Anthony KK and **Schanberg LE**, Pediatric Pain Syndromes And Management Of Pain In Children And Adolescents With Rheumatic Disease. *Pediatr Clin N Am* 2005 Apr;52(2):611-39, vii. Review. PMID: 15820381
7. Ardoin S. and **Schanberg LE**, The Management Of Pediatric Systemic Lupus Erythematosus. *Nat Clin Pract Rheumatol*. 2005 Dec;1(2):82-92. Review. PMID: 16932637
8. Connelly M, and **Schanberg LE**, Latest Developments In The Assessment And Management Of Chronic Musculoskeletal Pain Syndromes In Children, *Curr Opin Rheumatol*, 18(5):496-502, 2006. PMID: 16896289
9. Ardoin SP, Sandborg C, **Schanberg LE**, Management Of Dyslipidemia In Children And Adolescents With Systemic Lupus Erythematosus. *Lupus*. 16(8):618-26, 2007. Review. PMID: 17711898
10. Anthony KK, **Schanberg LE**, Assessment and Management Of Pain Syndromes And Arthritis Pain In Children And Adolescents. *Rheum Dis Clin N Am*. 2007 Aug;33(3):625-660. PMID: 17936179

11. Levy DM, Ardoin SP, **Schanberg LE**, Neurocognitive Impairment In Children And Adolescents With SLE. *Nat Clin Pract Rheumatol*. 2009 Feb 5(2):106-14. PMID: 19182817
12. Kimura Y, **Schanberg LE**, The Future of Pediatric Rheumatology Grounded in Evolution of Childhood Arthritis and Rheumatology Research Alliance. *The Rheumatologist*, a CARRA publication. 2016 Dec, online publication.
13. Sadun RE, **Schanberg LE**. Using Social Media To Promote Medication Adherence. *Nat Rev Rheumatol*. 2018 Jun 18. PMID: 29915383
14. Kimura Y, **Schanberg LE**. Pediatric Rheumatology Comes of Age: Part I. *Rheum Dis Clin North Am*. 2021 Nov;47(4):xvii-xviii. doi: 10.1016/j.rdc.2021.08.001. Epub 2021 Sep 8. PMID: 34635307.
15. Fuhlbrigge RC, **Schanberg LE**, Kimura Y. CARRA: The Childhood Arthritis and Rheumatology Research Alliance. *Rheum Dis Clin North Am*. 2021 Nov;47(4):531-543. doi: 10.1016/j.rdc.2021.07.010. Epub 2021 Sep 2. PMID: 34635290.
16. Ardalan K, Lloyd-Jones DM, **Schanberg LE**. Cardiovascular Health in Pediatric Rheumatologic Diseases. *Rheum Dis Clin North Am*. 2022 Feb;48(1):157-181. doi: 10.1016/j.rdc.2021.09.006. Epub 2021 Oct 29. PMID: 34798945.
17. Kimura Y, **Schanberg LE**. Pediatric Rheumatology Comes of Age: Part II. *Rheum Dis Clin North Am*. 2022 Feb;48(1):xix-xx. doi: 10.1016/j.rdc.2021.10.001. PMID: 34798962.

Papers in Press

Position and Background Papers

1. Chang R, Rubenoff R, Mayer J, Brandt K, **Schanberg LE**, Work Group Recommendations: 2002 Exercise and Physical Activity Conference, St Louis, Missouri. *Arthritis Rheum* 49(2):280, 2003. PMID: 12687524
2. Ross GS, Zelko F, Klein-Gitelman M, Levy DM, Muscal E, **Schanberg LE**, Anthony K, Brunner HI; Childhood Arthritis & Rheumatology Research Alliance Ad-Hoc Neurocognitive Lupus Committee. A Proposed Framework To Standardize The Neurocognitive Assessment Of Pediatric Patients With Pediatric Systemic Lupus Erythematosus (pSLE). *Arthritis Care Res*. 2010 Jul;62(7):1029-1033. PMID: 20589693
3. Borenstein, D, Altman R, Bello A, Chatham W, Clauw D, Crofford L, Croft J, Fox D, Hassett A, Kozin F, Pisetsky D, Richardson J, **Schanberg LE**, Starz T, Witter J. Report of the American College of Rheumatology Pain Management Task Force. *Arthritis Care Res*. 2010 May; 62(5):590-9. PMID: 20461782

Non-authored Publications

1. Arthur VL, Shuldiner E, Remmers EF, Hinks A, Grom AA, Foell D, Martini A, Gattorno M, Özen S, Prahalad S, Zeff AS, Bohnsack JF, Ilowite NT, Mellins ED, Russo R, Len C, Oliveira S, Yeung RSM, Rosenberg AM, Wedderburn LR, Anton J, Haas JP, Rösen-Wolff A, Minden K, Szymanski AM; INCHARGE Consortium, Thomson W, Kastner DL, Woo P, Ombrello Mj. IL1RN Variation Influences Both Disease Susceptibility and Response to Recombinant Human Interleukin-1 Receptor Antagonist Therapy in Systemic Juvenile Idiopathic Arthritis. PMID: 29609200

Consultant Appointments:

University of North Carolina Hospitals in Chapel Hill, NC

Scholarly Societies:

Alpha Omega Alpha
American Academy of Pediatrics
American College of Rheumatology
American Pain Society
Childhood Arthritis & Rheumatology Research Alliance
International Association for the Study of Pain
N.C. Pediatric Society
N.C Rheumatology Association
Society for Pediatric Research

Professional Awards and Special Recognitions:

First Duke-Oxford Welcome Exchange Resident	1987
Arthritis Foundation Pediatric Rheumatology Fellowship	1989 – 1993
American College of Rheumatology Senior Fellow Scholar Award	1991
NIAMS Clinical Investigator Award	1992 – 1997
ORWH Shannon Award, NIH	1998 – 2000
Alpha Omicron Pi Philanthropic Foundation Grant	2000
ACR-EULAR International Academic Rheumatology Exchange Program	2001
ACR/Immunex Visiting Professor, Barbara Bush Children's Hospital, Maine Medical Center, Portland, Maine	2001 – 2002
Castle Connolly America's Top Doctor	2002 – 2022

AΦA	2003
ACR/Immunex Visiting Professor, Gunderson Clinic, LaCrosse, WI	2007
Cambridge Who's Who of Distinguished Individuals	2010
Distinguished Professionals Online 2010/2011 Edition	2010
Best Doctors in America	2011 – 2020
Castle Connolly Exceptional Women In Medicine	2018
Duke Department of Pediatrics Mentoring Award	2020
Duke School of Medicine Distinguished Faculty Award	Nov 2022

Editorial Experience:

Editorial Boards

Editorial Board Member, Arthritis Care and Research	1998 – 2005
Editorial Board, Bulletin on the Rheumatic Diseases	2001 – 2003
Advisory Editor, Arthritis & Rheumatism	2001 – 2005
Associate Editor, Lupus Science & Medicine	2013 – present

Journal Reviewer

Arthritis Care and Research
 Arthritis & Rheumatism
 Health Psychology
 Journal of Consulting and Clinical Psychology
 Journal of Musculoskeletal Medicine
 Journal of Musculoskeletal Pain
 Journal of Rheumatology
 Journal of Pain
 Journal of Pediatrics
 Journal of Pediatric Psychology
 Pediatric Rheumatology Online Journal

Study Groups

Ad-hoc NIH Grant Review Committee: Basic and Clinical Research on Fibromyalgia	1998
--	------

Fetzer Institute Grant Review Committee	1998
NIH Grant Review Committee: Multicenter Arthritis Centers	2000
Member, Clinical/Therapeutics/Outcomes Study Section, Arthritis Foundation	2002 – 2005
Study Section Member, Epidemiology of Lupus and Related Disorders Consensus Conference	2005
Reviewer, Lupus Foundation of America Research Program	2006 – present
Ad-hoc NIAMS Grant Review Committee: Predictors of Pregnancy Outcome in SLE	2007
Reviewer, Lupus Research Institute (LRI)	2007 – 2013
Member, NIAMS Roundtable Discussion—Preclinical Disease Phase of Autoimmune Diseases	2010
Member, National Center for Complementary and Alternative Medicine (NCCAM / NIH) Review Committee for Centers of Excellence for Research on CAM (CERC) for Pain (P01)	2010 – 2011
Loan Repayment Program Special Emphasis panel, National Institutes of Arthritis, Musculoskeletal and Skin Diseases	2011– Present
Reviewer: NIAID Clinical Trial Implementation Grant (U01) and Clinical Trial Planning Grant (R34) Study Section	March, 2014 March 2021

Organizations and Participation:

Secretary, Executive Board of Directors, Carolinas Chapter Arthritis Foundation	1993 – 1998
Member, Board of Directors, Carolinas Chapter, Arthritis Foundation	1993 – 2000
Member, Pediatric Rheumatology Database Research Group	1993 – Present
Peer Reviewer, American Pain Society Clinical Practice Guidelines for Arthritis Pain Management	2000 – 2001
Executive Board, Southeastern Academic Pain Consortium	2000 – 2002
Program Committee Chair, Southeastern Academic Pain Consortium	2000 – 2002

Member, Pediatric Rheumatology Collaborative Study Group	2000 – Present
Member, NIAMS Intramural Research Program Pediatric Rheumatology Round Table	2001
Member, NIAMS Extramural Roundtable: Rheumatic Diseases	2001
Participant, Pediatric Rheumatology Clinical Research Network Planning Meeting	2001
Advisory Committee for the International Multicenter Study of Leflunomide in Juvenile Rheumatoid Arthritis	2001
Steering Committee, Pediatric Rheumatology Research Network	2001 – 2002
Member, American College of Rheumatology Pediatric Abstract Committee	2001 – 2002
Member, Executive Committee Pediatric Section, American College of Rheumatology	2001 – 2004
Ad hoc Steering Committee, Childhood Arthritis & Rheumatology Research Alliance	2002 – 2003
Protocol Evaluation Subcommittee- Childhood Arthritis & Rheumatology Research Alliance	2002 – 2004
Panel member, American Pain Society Clinical Practice Guidelines for Fibromyalgia Pain Management	2002 – 2005
Planning Committee, Innovative Therapies in Autoimmune Diseases meeting for the American College of Rheumatology	2003 – 2005
Member, Scientific Program Committee, International Symposium on Pediatric Pain	2004 – 2006
Chair, Pediatric SLE Disease Specific Committee for Childhood Arthritis & Rheumatology Research Alliance	2004 – 2008
Member, American College of Rheumatology Annual Scientific Meeting Planning Committee	2004 – 2008
Member, Lupus Foundation of America, Medical/Scientific Advisory Council	2004 – present
Steering Committee, Childhood Arthritis & Rheumatology Research Alliance	2004 – Present

Member, National Comprehensive Cancer Network Pediatric Pain Panel	2005
Member, External Scientific Advisory Committee (E-SAC) for “Meaningful Outcomes in Pediatric SLE Clinical Trials” (NIAMS U01 AR051868) PI: Hermine Brunner MD, CCHMC	2006 – 2010
Member, External Scientific Advisory Committee for “P50 Center for Lupus Research” PI: Virginia Pascual MD, Baylor	2006 – 2010
Member, Data Safety Monitoring Board for “Randomized Clinical Trial in Juvenile Fibromyalgia” (RO1 AR050028-01 A1) PI: Sumita Kashikar-Zuck PhD, CCHMC	2006 – 2010
Advisor, Dx Lupus, Rheuminations, Inc.	2006 – 2010
Scientific Advisory Board of Directors, The National Children’s Pain Center	2006 – Present
Consultant for the Site Performance Criteria Ad Hoc Committee for Childhood Arthritis & Rheumatology Research Alliance	2007
Ad Hoc Committee on Lupus Response Criteria: Cognition Sub-Committee	2007
Member, Planning Committee, 2008 American College of Rheumatology Pediatric Rheumatology Keystone Symposium	2007 – 2008
Board of Directors, North Carolina Rheumatology Association	2007 – 2010
Advisory Board, Development and usability and feasibility testing of a web-based self-management program for adolescents with arthritis	2007 – 2011
ACR/REF Blue Ribbon Panel	2008 – 2009
ACR/REF (Research and Education Foundation) Scientific Advisory Committee	2008 – 2010
Childhood Arthritis and Rheumatology Research Alliance Steering Committee as Large Center Representative	2008 – 2010
Childhood Arthritis and Rheumatology Research Alliance Neuropsychiatric Systemic Lupus Erythematosus Working Group	2008 – 2012

American College of Rheumatology Pain Management Task Force	2008 – 2010
Childhood Arthritis and Rheumatology Research Alliance Data/Tissue Sharing Sub-Committee	2008 – 2019
Childhood Arthritis and Rheumatology Research Alliance Publication Sub-Committee	2008 – 2014
Baylor University Medical School-Lupus Advisory Board	2008 – 2012
AWARE for ALL – Triangle Area Program Planner	2008 – 2010
Safety Officer, NIAMS, National Institutes of Health Data and Safety Monitoring Board (DSMB) for “Improved Understanding of the Biology and Use of TNF Inhibition in Children with JIA”, PI: Dan Lovell MD, CCHMC	2008 – 2013
Member, American College of Rheumatology/REF (Research and Education Foundation) Strategic Planning Committee	2009 – 2010
PRySM Abstract Co-Chair	2010 – 2011
2011 PRySM Planning Committee	2009 – 2011
Vice Chair, Childhood Arthritis & Rheumatology Research Alliance	2010 – 2013
Member, Executive Committee JIA Consolidated Registry	2010 – 2015
Member, Lupus Foundation of America Medical Advisory Board, Standard of Care Subcommittee	2010 – present
Member, American College of Rheumatology Committee on Research (COR) and NIH Relations Subcommittee	2010 – 2013
Member, American College of Rheumatology Research Agenda Task Force	2011 – 2012
Member, AF local board member and JA committee member	2016 – 2019
Ad hoc Promotion Review Committee, Harvard Medical School	April 2012
Panel Member, Overlapping Pain Syndromes Workshop, NIH	August 2012

Co-Chair, Rheumatology Therapeutic Area, BPCA	2012
Chair, Childhood Arthritis & Rheumatology Research Alliance	2013 – 2016
President, CARRA Inc. (Executive Board)	2014 – 2016
Past president (Executive Board), CARRA Inc	2016 – 2018
Duke Hub Liaison Team, Trial Innovation Network	2017
PI, CARRA Registry	2015- 2022
Chair, CARRA Registry and Research Oversight Committee	2018 - 2024
Advisory Board, Centre for Adolescent Rheumatology, Great Ormond Street, London	2019 - 2024
Abstract Reviewer, ACR/ARP’s 2020 Pediatric Rheumatology Symposium (PRSYM)	2020, 2023
Reviewer, NIH Loan Repayment	2023
Member, NIAMS, National Institutes of Health Data and Safety Monitoring Board (DSMB) for “Systemic Lupus Erythematosus (SLE) Treatment with N-acetylcysteine (NAC) (SNAC)”, PI: Andras Perl, MD, PhD, SUNY Upstate Medical University	12/2022 - present
Member, NIAMS Scientific Director search committee	2023

External Support:

Source	PI	% Effort	Purpose	Amount	Approximate Duration
Past:					
Arthritis Foundation	Laura E. Schanberg, M.D. (PI)		Genetic Mechanisms for Hematopoietic Lineage Determination	\$120,000	7/1/89 – 6/30/93
NIAMS	Laura E. Schanberg, M.D. (PI)		Regulation of the T-Cell Specific Gene CD7	\$400,000	7/1/92 – 6/30/97

Arthritis Foundation	Laura E. Schanberg, M.D., Francis Keefe, Ph.D. (co-PIs)	Pain Coping Strategies in Juvenile Primary Fibromyalgia Syndrome	\$240,000	7/1/94 – 6/30/97
Fetzer Institute	Laura E. Schanberg, M.D. (PI)	The Relationship of Daily Psychological Stress and Disease Activity in JRA	\$20,000	2/1/97 – 1/31/98
Arthritis Foundation	Laura E. Schanberg, M.D. (PI)	Daily Stress, Daily Mood and Disease Activity in JRA	\$400,000	7/1/98 – 6/30/03
NIH: 1R55AR045238-01	Laura E. Schanberg, M.D.	Daily Stress, Daily Mood and Disease Activity in Juvenile Rheumatoid Arthritis	\$100,000	10/1/98 – 9/31/00
Hoechst Marion Roussel: HWA 486/1037	Laura E. Schanberg, M.D. (site PI)	Phase 1B trial of leflunomide in pediatric patients with polyarticular course JRA	\$6742/pt	11/98 – 09/00
The Center for Health Design	Janice Palmer, Laura Schanberg MD (co-PIs)	The Effect of Art on Venipuncture Induced Stress	\$20,000	1/1/99 – 8/31/99

R.W. Johnson	Laura E. Schanberg, M.D. (site-PI)	RWJ-26898-002: An open-label study assessing population pharmacokinetics, safety of ultram in pediatric patients	\$5726	5/99 – 4/00
SmithKline Beecham: BRL 14777/262:	Laura E. Schanberg, M.D. (site-PI)	An open-label study assessing efficacy of nabumetone in patients with juvenile rheumatoid arthritis requiring NSAID therapy	\$3306/pt	11/99 – 8/00
Janssen Research Foundation: FEN-USA-87	Laura E. Schanberg, M.D. (site-PI)	A study to assess the safety, dose conversion and titration of fentanyl transdermal system in pediatric patients with chronic pain requiring opioid therapy	\$6250/pt	4/00 – 8/00

Amgen Immunex Corporation: Protocol 016.0028	Laura E. Schanberg, M.D. (site PI)	Phase III double-blinded randomized study comparing etanercept (Enbrel) combined with methotrexate versus methotrexate alone in children with polyarticular JRA	\$6000/pt	9/1/00 – 6/30/02
Amgen Immunex Corporation: Protocol 016.0026	Laura E. Schanberg, M.D. (site PI)	Phase IV registry of etanercept (Enbrel) in children with JRA	\$2700/pt	9/00 – 2/05
Arthritis Foundation	Laura E. Schanberg, M.D. (Mentor for Kelly K. Anthony, M.A.)	Parental Perceptions of Child Vulnerability: Relationships to Social Adjustment and Pain Experience in Preschool Aged Children with JRA	\$20,000	8/1/01 – 7/31/03
NIH NO1-AR-9- 22440:FDA FD-R- 001652-01 (subcontract from Johns Hopkins)	William St. Clair, M.D. (Local PI), Laura E. Schanberg (co-invest)	Randomized Clinical Trial of Etanercept in Wegener's Granulomatosis		8/1/01 – 7/31/03

Avenitis Pharma	Laura E. Schanberg, M.D. (site PI)	Protocol HWA 486/3503: A multicenter, multi-national study of leflunomide versus methotrexate comparison in patients with JRA	\$5600/pt	1/1/02 – 12/30/02
North Shore Univ. Hospital	Laura E. Schanberg, M.D. (Site PI)	Long Term Outcome of Two Cohorts of Children with Juvenile Arthritis	\$30 per patient	3/1/03 – 2/29/04
Medical Univ. of South Carolina	Melanie Bonner, PhD (site PI), Laura E. Schanberg, M.D. (Co-Investigator)	Adaptations & Cognitive Behavioral Intervention in Female Adolescents with Lupus	\$36,542	4/15/03 – 3/31/08
NIH	Marc C. Levesque, M.D., PhD., Laura E. Schanberg, M.D. (Co- Principal Investigators)	Nitric Oxide Metabolism in Statin-Treated Pediatric SLE	\$250,000	7/1/03 – 6/30/08
Lupus Clinical Trials Consortium Center	D. Pisetsky, M.D., Laura Schanberg, M.D. (Co-Directors)	Lupus Clinical Trials Consortium Center	\$50,000	1/1/04 – 12/31/05 *Renewed for 2006, 2007
Centocor, Inc.	Laura E. Schanberg, M.D. (PI)	Centocor Fellowship Award	\$40,000	7/1/04 – 6/30/05
American College of Rheumatology	Laura E. Schanberg, M.D. (PI)	Fellowship Training Award	\$26,500	7/1/05 – 6/30/06

American College of Rheumatology Physician Scientist Award	Stacy Ardoin, M.D. (PI), Laura E. Schanberg, M.D. (Sponsor/ Mentor)		Neuropsychiatric Manifestations in Pediatric Lupus: Cognitive Function	\$150,000	7/1/05 – 6/30/08
Arthritis Foundation New Investigator Award	Kelly K. Anthony, PhD (PI), Laura E. Schanberg, M.D. (Co-I)		Pain Experience in Very Young Children with JRA	\$150,000	7/1/05 – 6/30/07
American College of Rheumatology	Laura E. Schanberg, M.D. (PI)		Fellowship Training Award	\$26,500	7/1/06 – 6/30/07
Centocor, Inc.	Laura E. Schanberg, M.D. (PI)		Fellowship Award	\$40,000	7/1/06 – 6/30/07
American College of Rheumatology	Laura E. Schanberg, M.D. (PI)		Fellowship Award	\$26,500	7/1/07 – 6/30/08
Centocor, Inc.	Laura E. Schanberg, M.D. (PI)		Educational Grant	\$40,000	7/1/07 – 6/30/08
American College of Rheumatology	Laura E. Schanberg, M.D (site PI)		ACR/Amgen/Wyeth Rheumatology Fellowship Award	\$26,500	7/1/08 – 6/30/09
NIH/NIAID	David Pisetsky, M.D., Laura Schanberg, M.D. (Co-Investigators)		Training Program in Inflammatory and Immunological Disease	\$218,297	7/1/05 – 6/30/10
NIH/NIAMS R01-AR049762-01A2 subcontract	Carol Wallace, M.D. (PI), Laura E. Schanberg, M.D.(Site PI)	2%	Early Aggressive Therapy in Juvenile Idiopathic Arthritis (TREAT)	\$23,915	9/1/06 – 12/31/11

Fred and Edna Mandel Center for Hypertension and Atherosclerosis	Laura E. Schanberg, M.D. (PI)	5.0%	Understanding Inflammation and Premature Atherosclerosis in Pediatric SLE	\$300,000	9/1/06 – 4/31/11
NIH- UO1 AR0555054	Hermine Brunner, M.D. (PI), Laura E. Schanberg, M.D. (Co-Investigator)	1%	Efficacy Measures for Pediatric Lupus Studies	\$3,053	4/1/07 – 7/31/10
NIH	Deborah Levy, M.D., Laura E. Schanberg, M.D. (Consultant)		Neurocognitive Function in Childhood-Onset Systemic Lupus Erythematosus		7/1/07 – 6/30/12
NIAMS 1RO1-AR-053845-01A2	Laura E. Schanberg, M.D.(PI)	20%	Electronic Diary Assessment of Pain in Juvenile Arthritis	\$229,680	8/17/08 – 7/31/12
Baylor Research Institute subcontract	Pascuale (PI); Laura E. Schanberg, M.D. (site PI)	1%	New Predictors of SLE disease activity	\$9,984	9/1/08 – 8/31/11
McGill University Montreal subcontract	Laura E. Schanberg, M.D. (site PI, co-I)	1%	Lymphoma Risk in SLE	\$3,655	8/11/09 – 12/31/11
NIH/NIAMS RC2-AR-058934	Laura E. Schanberg, M.D. (PI)	23.5%	CARRA: Accelerating Toward an Evidence Based Culture in Pediatric Rheumatology (CARRAnet)	\$2,813,294/yr	9/30/09 – 8/31/12

Hospital for Sick Children	Stinson (PI); Laura E. Schanberg, M.D. (co-I)	1%	Superkidz Pain Project	\$12,086	3/25/10 – 3/24/11
NIH-NO1-AR-2-2265	Laura E. Schanberg, M.D.(PI)	20.5%	A Multicenter, Randomized, Double-Blind Placebo-Controlled Study to Test the Safety & Efficacy of Lipitor (Atorvastatin) in Reducing the Progression of Carotid IMT in Early Childhood SLE. The Atherosclerosis Prevention in Pediatric Lupus Erythematosus (APPLE) Study	\$7,203,810	9/30/02 – 10/31/11
Montefiore Medical Center Subcontract NIH-NIAMS-07-01	Norman Ilowite, M.D. (PI), Laura E. Schanberg, M.D. (Sub-contract PI)	14%	NIH-NIAMS-07-01: IL-1 Inhibition in Systemic Onset Juvenile Idiopathic Arthritis Innovative Therapies for Rheumatic and Skin Diseases (RAPPORT)	\$216,540/yr	8/15/07 – 12/31/13

Montefiore Medical Center-RAPPORT NIH-NIAMS-07-01	Laura E. Schanberg, M.D.(Site PI)	1%	Juvenile Idiopathic Arthritis, Randomized, Double Blinded Placebo Controlled Multicenter Trial	\$33, 161	7/1/08 – 12/31/13
Cincinnati Children's Hospital Medical Center subcontract (Lupus Foundation of America)	Brunner (PI); Laura Schanberg (co-PI)	5%	Validation of PROMIS Modules for Use in Pediatric Lupus	\$36,317	2012 – 2014
UCSF subcontract (Lupus Foundation of America)	Von Scheven (PI); Laura Schanberg (subcontract PI)	3%	Lupus Nephritis Treatment in Pediatrics	\$69,058	2012 – 2014
Hackensack Medical Center (Arthritis Foundation)	Kimura (PI), Schanberg (DCRI PI)	3%	Implementation of CARRA Treatment Plans for SJIA	\$75,000	2012 – 2014
Hackensack Medical Center	Kimura (PI) Schanberg (DCRI PI)	2.8%	Developing Tools for Localized Scleroderma Comparative Effectiveness Studies	\$115,959	2012 – 2014
Cure JM Foundation	Schanberg	4.2%	CARRAnet JDM Cure JM	\$90,000	2011-2016
Arthritis Foundation	Schanberg	10%	PRemote: An Electronic Self-Management Intervention for Pain in JIA.	\$200,000	2012 – 2015

NIH/NIAMS 1R01AR063890	Laura E. Schanberg, M.D.(PI)	8%	Enhancing CARRA research: integration and dissemination of clinical data.	\$227,434	9/17/2012 – 9/16/2016
PCORI	Laura E. Schanberg, M.D.(PI)	17%	Patients, Advocates and Rheumatology Teams Network for Research & Service (PARTNERS)	\$1,000,000	3/1/2014 – 8/31/2015
Children's Mercy Hospitals & Clinics subcontract (NIAMS)	Connelly (PI); Schanberg (co- invest)	10%	WebSMART: Efficacy of web-based pain self- management for adolescents with JIA	\$9,160	2011 – 2016
Arthritis Foundation	Schanberg (PI)	1%	CARRA Administrative Core	\$572,000	1/1/14 – 12/31/15
NIH/NIAMS 7R13-AR053058	Schanberg (PI)	1%	Pediatric Rheumatology Research Annual Meeting	\$50,000	9/1/15 – 7/31/16
NIH 1U34- AR066294-01A1	Schanberg (PI)	11.5%	Comparison of Methotrexate and Biologics in JIA (COMPARE- JIA)	\$266,640	07/01/16 – 06/30/18

Hackensack University PCORI (sub)	Schanberg (Sub PI)	15%	Comparative Effectiveness of CARRA Treatment Strategies for polyJIA (STOP JIA)	\$192,943	11/1/15 – 10/31/19
PCORI 501-27613	Schanberg (PI)	30%	PCORnet PPRN Phase 2	\$472,011	10/1/15 – 9/30/19
SOBI-03	Schanberg (PI)	9%	A study of systemic Juvenile Idiopathic Arthritis, Still's disease and progression in patients over 16 years old.	\$9,309,297	06/01/16 – 10/29/19
NIAMS U19	Schanberg, Reeves (Co PI)	10%	Enhancing Clinical Meaningfulness and Usefulness of PROMIS Pediatric Measures Vial Validation in Children and Adolescents with Cancer, IBD, SLE, and JIA	Total project \$2.9 million	10/30/15 – 9/29/19
Children's Hospital of Philadelphia subcontract (Lupus Foundation of American)	Sullivan (PI) Schanberg (site PI)	1%	Urinary HER2 as a biomarker for lupus nephritis	\$10,000	11/01/15 – 10/31/18
CARRA	Schanberg (PI)	20%	CARRA Leadership	\$163,007	1/1/2015 – 12/31/19

NIH U19AR069522-01	Schanberg, Reeves (Sub PI)	1%	Project 1- Enhancing Clinical Meaningfulness and Usefulness of PROMIS Pediatric Measures via Validation in Children and Adolescents	\$81,865	07/10/17 – 06/29/20
Boston Children's/FDA 1U24-FD006543 -	Schanberg (PI)	5%	Expanding HL7 FHIR to support post-marketing research and surveillance within multi-source, chronic disease registries.		10/01/18-08/31/2021
Seattle Children's/RRF	Schanberg (PI)	5%	Disease Recapture after Drug Discontinuation and Flare in JIA		11/01/19–8/31/21
Boston Children's/PCORI	Schanberg (PI)	5%	Enabling Real-time, Personalized Engagement in Research: an App-based Approach		05/01/19–04/30/21
CARRA	Schanberg (PI)		PARTNERS Extension -		04/01/19-12/31/2020

CARRA	Schanberg (PI)	5%	CARRA Registry	\$7,892,739	3/24/15 – 4/20/23
CDC University of Utah	Schanberg (co-PI)	5%	CARRA Lupus Registry		9/1/2019-8/31/2022

Present:					
Source	PI	% Effort	Purpose	Amount	Approximate Duration
CARRA	Schanberg (PI)	10%	CARRA Leadership	\$	7/1/2023 – 6/30/24
PCORI PaCr-2017C2-8177	Schanberg (PI)	20%	Improving Outcomes in Limited Juvenile Idiopathic Arthritis.	\$7,902,535	07/01/2018 – 06/30/2023, extension 12/30/24
Bristol-Myers Squibb	Schanberg (PI)	2%	A Randomized, Open Label, Multi-Center, Phase 3 Efficacy Study of Sub-Q Abatacept in Preventing Extension of Oligoarticular Juvenile Idiopathic Arthritis JIA		04/03/19– 08/31/2023 extension 12/30/24
CARRA/Bristol-Myers Squibb	Schanberg (PI)	1%	COVID seroconversion in abatacept and control children in LIMIT-JIA		6/9/2021 - 6/9/2025

CDC
University of Utah

Schanberg (co-I)

3%

CARRA Lupus
Registry

10/1/2022 –
9/30/2027

Funded:					
Source	PI	% Effort	Purpose	Amount	Approximate Duration
PCORI Phased Large Award for Comparative Effectiveness Research	Schanberg (PI)	25% (3 mos)	Trial of Sequential Medications After TNF failure in JIA (SMART-JIA)	\$22,705,562	5/1/2024-4/31/2031

Mentoring Activities:

Faculty

1. Mentor, New Investigator Award, Kelly Anthony, PhD (July 2005-July 2007)
2. Chair, Junior Faculty Mentoring Committee, Esi Morgan Dewitt, M.D. "Patient Reported Outcome Measures In Pediatric Rheumatology And Pediatric Clinical Trials" Duke University Medical Center, (December 2005-2008)
3. Chair and Primary Mentor, Junior Faculty Mentoring Committee, Stacy Ardoin, M.D. "Cognitive Dysfunction and Dyslipidemia in Pediatric SLE" Duke University Medical Center, (July 2006 – Jan 2009)
4. Primary Mentor, K01, Cecelia Valrie, PhD "Using E-Diaries to Assess Sleep and Pain in Children and Adolescents with Sickle Cell Disease (SCD)" (July 2010-July 2014)
5. Co Primary Research Mentor And Member Junior Faculty Mentoring Committee, Stephen Balevic MD, (July 2018 – present)
6. Co Research Mentor And Member Junior Faculty Mentoring Committee, Rebecca Sadun MD PHD, (July 2018 – 2021)
7. Primary Research Mentor and Member Junior Faculty Mentoring Committee, Kaveh Ardelan MD (Oct 2019 – present)
8. Research Mentor, Tamar Rubenstein MD (Oct 2020 – 2022)
9. Research Mentor, Jonathan Hausmann MD (Jan 2021 – 2022)

10. Co-primary research mentor and member Junior Faculty Mentoring Committee, Rachel Randell (July 2023 – present)

Fellows, Doctoral, Post docs

1. Committee member, Thesis Committee for Kelly Anthony, "Parental perceptions of child vulnerability in parents of children with chronic illness" (Masters Awarded 2001), Department of Psychology, UNC
2. Committee member, Thesis Committee of Lisa Macharoni, "Parent pain coping strategies: Predictors of child pain and physical functioning" (proposed 1999), Department of Psychology, UNC
3. Committee member, Doctoral Thesis Committee of Kelly Anthony, "Parental perceptions of children vulnerability: Relationships to adjustment and medical outcomes in preschool-aged children with chronic arthritis" (proposed 2001, awarded 8/1/2004), Department of Psychology, UNC
4. Committee member, Thesis Committee for Adam Huber, B.A., M.D., "Comparison of amitriptyline and placebo for the reduction of Pain in Children with Polyarticular Juvenile Rheumatoid Arthritis Using Serial N-of-1 Trials to Estimate Population Effect" (Master of Science awarded 9/2005), Department of Health Policy, Management and Evaluation, University of Toronto
5. Primary mentor and committee member, Fellowship Mentoring Committee, Stacy Ardoin, M.D., Duke University Medical Center, Cognitive Dysfunction in Neuropsychiatric SLE, (July 2002-June 2006)
6. Committee member, Fellowship Mentoring Committee, James Birmingham, M.D., IBD Markers in Rheumatic Disease Patients IL-1ra for Prevention of Chondropathy Following Knee Injury, (July 2003-July 2007)
7. Committee member, Mentoring Committee, Christine Savage, M.D. Duke University Medical Center, (December 2005)
8. Committee member, Thesis Committee for Maggie Hood Bromberg, "Pain, Coping, and Sleep in Children with Juvenile Polyarticular Arthritis" (Masters proposed May 2008, awarded May 2010), Department of Psychology, UNC
9. Committee member, Thesis Committee for Maggie Hood Bromberg, "Pain, Coping, and Sleep in Children with Juvenile Polyarticular Arthritis" (Doctorate proposed May 2011, awarded Dec 2012) Department of Psychology, UNC
10. Committee member, Fellowship Mentoring Committee, Ioannis Kalampokis, M.D., (July 2009-July 2013) and member, Immunology Doctoral Committee
11. Chair, Fellowship Mentoring Committee, Eveline Wu, M.D. (July 2008 – July 2013).

12. Primary Mentor, Laura Lewandowski, MD. Pediatric SLE in South Africa (July 2012 – 2015)
13. Co primary research mentor and member Fellowship Mentoring Committee, Stephen Balevic MD, (July 2016 – June 2018)
14. Co primary research mentor and member Fellowship Mentoring Committee, Rebecca Sadun MD PHD, (July 2016 – June 2018)
15. Committee member, Fellowship Mentoring Committee, Cory Stingl MD, (July 2017 – July 2018)
16. Committee member, Fellowship Mentoring Committee, Katherine Kaufman MD, (July 2018 – June 2020)
17. Co-primary research mentor and member Fellowship Mentoring Committee, Rachel Randell (July 2019 – June 2023)

Resident

1. Mentor, Amy Gualtney MD. Impact of differences in Parent and Child Report of Pain and Fatigue in JIA (July 2015-July 2017)

Medical Student

1. Mentor, Human Development Program, Allison Hart, “The Role of Social Stress in the Care of Pediatric Pain Patients”, Undergraduate Program in Human Development (2003)

Educational Activities:

Didactic Classes

Development of Courses/Educational Programs

1. Edwards CL, Fras AM, Ginsberg B, **Schanberg LE**, Physiology and Assessment of Pain Graduate Medical Education Competency Modules, Duke University Medical Center, February, 2004
2. Edwards CL, Fras AM, Ginsberg B, **Schanberg LE**, Treatment of Pain. Graduate Medical Education Competency Modules, Duke University Medical Center, July, 2005
3. **Schanberg LE**, Gender and Pain in Children lecture for undergraduate psychology course: Sex, Gender, and Pain, Duke University, Durham, NC. October 23, 2000

Development of Assessment Tools and Methods

1. Validation of PROMIS measures (PEPR grant – now in data analysis)
2. Development of vRheum

Invited Lectures and Presentations:

International Meetings

1. “Mood and Stressful Events Predict Daily Fluctuations in Disease Symptoms in Juvenile Polyarticular Arthritis”. Annual European Congress of Rheumatology “EULAR 2001” Prague, June 2001
2. “Family Pain History Predicts Child Health Status in Children With Chronic Rheumatic Disease”. Annual European Congress of Rheumatology “EULAR 2001” Prague, June 2001
3. Family Pain History Predicts Child Health Status in Children with Chronic Rheumatic Disease,” Institute of Rheumatology, Prague, Czech Republic. June 18, 2001
4. “The Relationship of Daily Mood and Stressful Events to Symptoms in Juvenile Idiopathic Arthritis,” Karolinska Hospital, Stockholm, Sweden. June 21, 2001
5. “The Relationship of Daily Mood and Stressful Events to Symptoms in Juvenile Idiopathic Arthritis,” Kennedy Institute, London, England. June 22, 2001
6. “The Role of Opioids in the Treatment of JIA.” The 2nd Joint Scientific Meeting of the American Pain Society and the Canadian Pain Society, Vancouver, BC. May 6, 2004
7. “Special Needs and Challenges for Children and Adolescents with SLE: A Global Perspective”, 9th International Congress on Systemic Lupus Erythematosus, Vancouver, British Columbia. June 25, 2010
8. “Common Pediatric Musculoskeletal Pain Syndromes”, Pediatric Teaching Rounds, Royal University Hospital, Saskatoon, Ontario, Canada September 23, 2010
9. “Therapy Insight: Cardiovascular Disease in Pediatric Systemic Lupus”, 10th International Congress on Systemic Lupus Erythematosus, Buenos Aires, Argentina April 19, 2013
10. “Persistent Pain in Controlled Organic Disease: JIA” International Society of Pediatric Pain, Stockholm June 20, 2013
11. CARRA Registry: An Observational Registry for Children with Rheumatic Diseases. Presented at Kuwait Rheumatology Annual Conference. January 29, 2015

12. Update on Juvenile Dermatomyositis. Presented at Kuwait Rheumatology Annual Conference. January 29, 2015
13. Juvenile Idiopathic Arthritis: New Treatments, Better Outcomes. Presented at Kuwait Rheumatology Annual Conference. January 29, 2015
14. Advocating and Implementing Change: Lessons Learned – Research. Childhood Arthritis and Beyond Conference, Chateau Lake Louise, Alberta Canada, April 26, 2019

National Scientific Meetings – Oral Not Posters Invited National

1. “Characterization of the Human CD7 Gene and Potential Regulatory Elements”. 23rd Congress of the International Society of Hematology/ 32nd Annual Meeting of the American Society of Hematology (Boston, November 1990)
2. “Lymphoid Specific Expression of CD7 in Transgenic Mice”. 33rd Annual Meeting of the American Society of Hematology (Denver, November 1991)
3. “Social Context of Pain in Children with Fibromyalgia: Parental Pain History and Family Environment”. Arthritis Foundation Research Conference (Bethesda, May 1997)
4. “Pain Coping and the Pain Experience in Children with Juvenile Chronic Arthritis”. American College of Rheumatology 61st National Meeting (Washington, D.C., November 1997)
5. “The Relationship of Mood and Stressful Events to Disease Symptoms in Pediatric Rheumatic Disease: A Study Using Daily Measures”. Arthritis Research Conference (Alexandria, VA, August 1999)
6. “The Effect of Art in Decreasing Pain of Venipuncture”. 1999 Symposium on Healthcare Design (Boca Raton, Florida, September 1999)
7. “Child's Disease Duration, Rather Than Disease Severity, Correlates with Family Characteristics in Pediatric Rheumatic Disease”. ACR/ARHP Annual Scientific Meeting (Boston, November 1999)
8. “Parental Pain History and its Relationship to the Health Status of children with Rheumatic Disease”. ACR/ARHP Annual Scientific Meeting (Boston, November 1999)
9. “Parent Perceptions of Child Vulnerability Predict Social Adjustment of Children with Chronic Disease”. ACR/ARHP Annual Scientific Meeting (Philadelphia, November 2000)

10. "An Initial Evaluation of the Efficacy and Safety of Leflunomide (LEF) in Children with Polyarticular Course Juvenile Rheumatoid Arthritis (JRA)". ACR/ARHP Annual Scientific Meeting. San Francisco, CA. November 2001.
11. "Parental Perceptions of Child Vulnerability Predict Parent Rated Physical Disability in Children with Polyarticular Arthritis". ACR/ARHP Annual Scientific Meeting (San Francisco, November 2001)
12. "Arts & Healing: Research Successes, Failures and Best Practices," Society for the Arts in Healthcare Meeting, Durham, NC. January 24, 2002
13. "Pain in Children with Arthritis", International Conference on Health Promotion and Disability Prevention for Individuals and Populations with Rheumatic Disease: Evidence for Exercise and Physical Activity, St. Louis, Missouri. March 23, 2002
14. "Influence of Families On Perception of Pain in Children: Implications For Development Of The Pain Response." American College of Rheumatology/EULAR Study Group, 66th American College of Rheumatology Annual Scientific Meeting, New Orleans, LA. October 26, 2002
15. "Understanding Children with Rheumatic Diseases: Issues in Clinical Care and Ontogeny of the Immune System". American College of Rheumatology/EULAR Study Group, 66th American College of Rheumatology Annual Scientific Meeting, New Orleans, LA. October 26, 2002
16. "Genomics of Juvenile Arthritis Susceptibility and Severity". American College of Rheumatology Concurrent Session, 66th American College of Rheumatology Annual Scientific Meeting, New Orleans, LA. October 26, 2002
17. "Pain in Children with JRA: Pharmacologic Treatment". Pediatric Rheumatology 2003: Park City and Beyond, Snowmass, CO. March 24, 2003
18. "Investigator-Initiated Clinical Trials-CV." Lupus Today: Research into Action (NIH, NIAMS, DHHS). Wardman Park Hotel Washington, DC. July 17, 2003
19. "Fostering Independence in Children with Rheumatic Disease: The Role of Healthcare Providers." Combined American College of Rheumatology/ ARHP Clinical Symposium, 67th American College of Rheumatology Annual Scientific Meeting, Orlando, FL. October 26, 2003
20. "Non-Rheumatologic Pain in Children: The Pediatric Rheumatologist's Perspective." Clinical Symposium, 67th American College of Rheumatology Annual Scientific Meeting, Orlando, FL. October 27, 2003
21. "Arthritis Research-Investing in a Cure." Arthritis Foundation's 2004 Advocacy Summit, Washington, D.C. March 15, 2004

22. "Atherosclerosis Prevention in Pediatric Lupus Erythematosus: APPLE Trial Design." 7th International Congress, SLE and Related Conditions. NY. May 12, 2004
23. "Concurrent Session, 68th Annual American College of Rheumatology Annual Scientific Meeting, Orlando, FL." October 18, 2004
24. "Perceptions of Child Vulnerability in Parents of Young Children with Arthritis: Relationships with Child Adjustment, Functional Status, and Health Care Use". ACR Scientific Meeting. Orlando, FL. October 2004.
25. "Consequences of Disease and Therapy," Innovative Therapies in Autoimmune Diseases Meeting, Washington DC. March 4, 2005
26. "Pain in Pediatric Rheumatic Disease: Update on Mechanisms and Intervention," American College of Rheumatology Clinical Symposium, San Diego, CA. November 15, 2005
27. Moderator, "Systemic Lupus Erythematosus" Childhood Arthritis Rheumatology Research Alliance Scientific Meeting, Denver, CO. May 5, 2006
28. "SLE in Children (Not Just Young Adults)." New Jersey Rheumatology Association Somerset Hills Hotel, Warren, NJ May 11, 2006
29. "Update in Pediatric Systemic Lupus Erythematosus" American College of Rheumatology Annual Scientific Meeting, Washington, DC. November 12, 2006
30. "Parent Stress as a Predictor of Depression in Children with Polyarticular Arthritis". American College of Rheumatology (ACR) Scientific Meeting. Washington, DC, November 2006.
31. "Pediatric Rheumatology Research Annual Scientific Meeting". CARRA Annual Meeting. Denver, CO, June 2007.
32. "Electronic Momentary Assessment of Child Pain, Parent Responses, and Emotion in Children with Arthritis". American College of Rheumatology and ARHP Combined Concurrent Annual Scientific Meeting. Boston, MA, November 2007.
33. "Combined Clinical Symposium: Management of Psychiatric Illness in Children and Adolescents with Rheumatic Disease" American College of Rheumatology Scientific Meeting, Boston, MA. November 6, 2007
34. "Clinical Update on Juvenile Primary Fibromyalgia Syndrome" 17th Annual Practical Pediatrics for the Primary Care Physician Conference, St. Paul Campus of United and Children's Hospitals and Clinics of Minnesota, Minneapolis, MN September 28, 2007

35. "Pain Syndromes in Patients with Rheumatic Disease", ACR Keystone Pediatric Rheumatology Symposium, Keystone, CO. March 5, 2008
36. "Associations Between Race/Ethnicity and Clinical SLE Features in the Atherosclerosis Prevention in Pediatric Lupus Erythematosus (APPLE) Cohort". American College of Rheumatology (ACR) Keystone Pediatric Rheumatology Symposium. Keystone, CO, March 2008.
37. "Clinical Trials in Pediatric Rare Diseases: The APPLE Experience", 44th Drug Information Association (DIA) Annual Meeting, Boston, MA June 25, 2008
38. "Bench to Bedside Symposium: Coagulopathies in Rheumatic Disease", American College of Rheumatology (ACR) Scientific Meeting, Keystone CO. March 3, 2008
39. "Abstract Session II: Advances in the Understanding of Lupus in Children". American College of Rheumatology (ACR) Scientific Meeting, Keystone CO. March 3, 2008
40. "Translation Research Symposium: Systemic Lupus Erythematosus Biomarkers". American College of Rheumatology (ACR) Scientific Meeting, Keystone CO. March 3, 2008
41. "General Issues of Trial Development: The APPLE Trial", ACR Innovative Therapies in Autoimmune Diseases Conference, Arlington, VA March 7, 2009
42. "Recruitment and Retention", Essentials for Successful Clinical Research for CARRA Members, Dallas, TX April 23, 2009
43. "Does Atorvastatin Reduce Carotid Atherosclerosis in Pediatric SLE? Results from the Atherosclerosis Prevention in Pediatric Lupus Trial: The Largest Multicenter, Randomized, Double-Blind, Placebo-Controlled Study in Pediatric SLE". American College of Rheumatology/ARHP Annual Scientific Meeting. Atlanta, GA, November 2010.
44. "Daily Electronic Reports of Pain and Activity Difficulties in Children with JIA Versus Children with Other Rheumatic Diseases". American College of Rheumatology/ARHP Annual Scientific Meeting. Atlanta, GA, November 2010
45. "Sleep in Polyarticular Juvenile Idiopathic Arthritis: An Electronic Daily Diary Study". American College of Rheumatology/ARHP Annual Scientific Meeting. Atlanta, GA, November 2010.
46. "The Childhood Arthritis & Rheumatology Research Alliance Network Registry: Demographics and Characteristics of the Initial One Year Cohort". ACR/ARHP Annual Scientific Meeting. Chicago, IL. November 6, 2011.

47. "Cancer Risk In Pediatric Systemic Lupus: Updated Analyses". ACR/ARHP Scientific Meeting. Chicago, IL. November 8, 2011.
48. "CARRA Lupus Disease-specific Group. Developing Consensus Treatment Plans for Proliferative Nephritis in Juvenile Systemic Lupus Erythematosus: Maintenance Therapy". ACR/ARHP Scientific Meeting. Chicago, IL. November 9, 2011.
49. "Daily Pediatric Pain Experiences: Findings from Sickle Cell Disease and Juvenile Arthritis." National Conference in Pediatric Psychology, San Antonio, TX. March 2011
50. "The CARRA Registry." Presented at ACR Clinical Research Conference: Comparative Effectiveness Research in Rheumatology. Chicago, IL. November 5, 2011
51. "Special Issues in Pain Research". American College of Rheumatology (ACR) Annual Scientific Meeting in Washington, DC November 9, 2012
52. "Novel Approaches to Pain Management in Juvenile Idiopathic Arthritis. American College of Rheumatology (ACR) Annual Scientific Meeting, Washington, DC November 12, 2012
53. "Pain Research in Children". NIH Pain Symposium. Bethesda, MD. December 2012
54. "Frequent Self-Reported Pain and Disease Symptoms in Juvenile Idiopathic Arthritis Persist Despite Advances in Medication Therapies: An Electronic Diary Study", ACR/ARHP Annual Meeting, Washington, DC, November 13, 2012
55. "Level and Determinants of Health Related Quality of Life in Childhood-Onset Systemic Lupus Erythematosus" 2013 ACR/ARHP Annual Meeting, San Diego CA
56. "CARRA: A Model for Studying Rare Pediatric Diseases". Presented at the 2014 PeDRA 2nd Annual Conference. November 8, 2014
57. "Cancer Risk in 5,108 Patients with Juvenile Idiopathic Arthritis (JIA)" Accepted, Oral presentation 2015 ACR San Francisco.
58. "Results from the Childhood Arthritis and Rheumatology Research Alliance Systemic JIA Consensus Treatment Plans Pilot Study". Accepted, Oral presentation 2015 ACR San Francisco.
59. "CARRA Registry Investigators". 2016 ACR/ARHP Annual Meeting.

60. "Associations Between 25-Hydroxyvitamin D, Parathyroid Hormone, and Cathelicidin Concentrations with Inflammation and Cardiovascular Risk in Subjects with Pediatric Systemic Lupus Erythematosus".
61. "2016 ACR/ARHP Annual Meeting Multicenter Prospective Study on the Role of Urinary HER2 As a Lupus Nephritis Biomarker" 2016 ACR/ARHP Annual Meeting.
62. "A Pilot Study of Consensus Treatment Plans for Induction Therapy in Childhood Proliferative Lupus Nephritis". 2016 ACR/ARHP Annual Meeting.
63. "Patterns of Medication Use in Children with Juvenile Idiopathic Arthritis: Results from the Childhood Arthritis & Rheumatology Research Alliance Registry" 2016 ACR/ARHP Annual Meeting
64. "Mental Health Care for Adolescents with Rheumatologic Conditions: Perspectives from Pediatric Behavioral Health Providers in North America". 2016 ACR/ARHP Annual Meeting.
65. "Corticosteroid Regimen Use in the Pilot Study of Consensus Treatment Plans for Induction Therapy in Childhood Proliferative Lupus Nephritis". 2017 Pediatric Rheumatology Symposium, Houston, TX.
66. "Methotrexate use and route of administration in JIA: Results from the Childhood Arthritis & Rheumatology Research Alliance Registry". 2017 Pediatric Rheumatology Symposium, Houston, TX.
67. "Underutilization of Social Workers for Mental Health Care of Adolescents in Pediatric Rheumatology: A Mixed Methods Study". 2017 Pediatric Rheumatology Symposium, Houston, TX.
68. "Baseline characteristics of the First 123 Patients Enrolled in the Childhood Arthritis and Rheumatology Research Alliance Start Time Optimization of Biologic Therapy in Polyarticular JIA Comparative Effectiveness Study. ACR/ARHP Annual Scientific Meeting, 2017.
69. "Special Issues in Pediatric Drug Safety." Accelerating Drug Development for Polyarticular Juvenile Idiopathic Arthritis (pJIA)" M-CERSI and FDA Workshop. FDA White Oak Campus, Silver Spring MD, Oct 2, 2019.
70. "Recruiting and Enrolling in Pediatric SLE Clinical Research: Special Issues, Challenges and Experience". Increasing Ancestral Diversity in Lupus Clinical Studies: Overcoming Barriers, Bethesda MD, Oct 15 2019.
71. "Using a disease specific registry for clinical trials". Leveraging Innovative Trials Design I, Pediatric DIA meeting, Bethesda MD, Oct 16 2019.
72. "CARRA: Past, Present, and Future". CARRA Virtual Annual Meeting Keynote, May 3 2022.

73. "CARRA: Lessons Learned Developing a Clinical Research Network". GIC Virtual Annual Meeting Keynote, May 10 2022.

Instructional Courses, Workshops, Symposiums (National)

1. "First Annual Fall Symposium on Pain and Symptom
2. ". Presentation "Fibromyalgia" Duke University Medical Center, Durham, NC. October 30, 1999
3. Janssen Preceptorship. Presentation "Pain: Myths and Misconceptions" and "The Rheumatologists Role in Pain Management". Duke University Medical Center, Durham, NC. February 4, 2000
4. "Southeastern Regional Pain Symposium Planning Meeting". Thomas Center, Durham, NC. March 31, 2000
5. "Pain Related Suffering: Connecting Basic Science to Clinical Reality", 1st Annual Southeastern Academic Pain Symposium". Washington Duke Inn, Durham, NC. October 20-22, 2000
6. "Fibromyalgia", Duke Internal Medicine CME Course, Hilton Head, SC. June 19, 2000
7. "Implementing JCAHO Pain Assessment & Management Standards." Scotland Memorial Hospital, Laurinburg, NC. Presentations "Myths and Misconceptions", "Physiology of Pain", "Rationale Approach to the Pharmacologic Management of Pain," and "Ethics of Pain Management." August 1, 2000
8. "Implementing JCAHO Pain Assessment & Management Standards". Bladenberg Memorial Hospital. Presentations "Myths and Misconceptions", "Physiology of Pain", "Rationale Approach to the Pharmacologic Management of Pain", and "Ethics of Pain Management". Bladenberg, NC October 11, 2000
9. "Juvenile Fibromyalgia: A Chronic Pain Syndrome", Alexander Spock Symposium. Washington Duke Inn, Durham, NC. October 14, 2000
10. "Complex Regional Pain Syndrome: Connecting Basic Science to Clinical Reality", 2nd Annual Southeastern Academic Pain Symposium", Grandover Hotel, High Point, NC. October 26-28, 2001
11. "Implementing JCAHO Pain Assessment & Management Standards". Northeastern Medical Center, Presentations "Myths and Misconceptions", "Physiology of Pain", "Rationale Approach to the Pharmacologic Management of Pain", and "Ethics of Pain Management". Concord, NC. January 30, 2001
12. "Primary Care Pain Management Dinner Program". Presenter "Fibromyalgia" Duke Pain and Palliative Care Program, Durham, NC. January 2001

13. "Implementing JCAHO Pain Assessment & Management Standards". Southern AHEC Presentations "Myths and Misconceptions", "Physiology of Pain", "Rationale Approach to the Pharmacologic Management of Pain", and "Ethics of Pain Management". Lumberton, NC. February 23, 2001
14. "Arthritis in Young Adults (Lupus, Lyme, Fibromyalgia, etc.)," NC State University Student Health Services, Raleigh, NC. December 11, 2001
15. "Program Chair, "Fibromyalgia: Connecting Basic Science to Clinical Reality", 3rd Annual Southeastern Academic Pain Symposium, Grandover Hotel, High Point, NC. October 4-6, 2002
16. "Investigator-Initiated Clinical Trials-CV." Lupus Today: Research into Action (NIH, NIAMS, DHHS). Wardman Park Hotel Washington, DC. July 17, 2003
17. "Update on Pediatric Lupus", Therapeutic Advances in Lupus, University of North Carolina at Chapel Hill, Thurston Arthritis Research Center, Chapel Hill, NC April 8, 2006
18. "Recent Advances in Fibromyalgia Treatment." Southern Pain Society Annual Scientific Meeting Lexington, KY October 16, 2005
19. "Clinical Trials in Pediatric Lupus: The APPLE Experience, Lupus Federal Working Group". Bethesda, MD, July 24, 2006
20. "Atherosclerosis in SLE: Advances in Understanding and Managing Cardiovascular Risk" Duke/Lupus Foundation of American Sponsored Program, Charlotte, NC. February 11, 2006
21. "Musculoskeletal Pain Syndromes" American College of Rheumatology Pediatric Rheumatology Review Board Course, Atlanta, GA. March 3, 2006
22. "Systemic Lupus Erythematosus" American College of Rheumatology Pediatric Rheumatology Review Board Course, Atlanta, GA. March 4, 2006
23. "Psoriatic Arthritis, Ankylosing Spondylosis, Arthritis Associated with Inflammatory Bowel Disease" Department of Pediatrics CME Series, Carolinas Medical Center Northeast, Concord, NC. May 15, 2008
24. "Update of the APPLE Trial: Analysis of Baseline Data" Mandel Lecture Series, Duke University Medical Center, Durham, NC October 21, 2008
25. "Transition from Pediatric to Adult Care", Carolina Fellows Conference, Duke University Medical Center, Durham, NC March 24, 2011
26. "Pediatric Musculoskeletal Pain Syndromes", North Carolina Pediatric Society Open Forum meeting, Concord, NC April 9, 2011
27. "Pain in Pediatrics." Presented at ARHP Clinical Focus Course: Targeted Approaches to Complex Pain Management. Chicago, IL. November 5, 2011

28. "Pediatric Pain Management." Presented at the "Pain Management: The Good the Bad and The Ugly" Meeting in Nashville, TN September 13, 2014
29. "Research: There is a Role for You! Presented at 2016 National Juvenile Arthritis Conference EAST". Philadelphia, PA. August 12, 2016
30. "The Duke Clinical Research Institute Collaboration and Duke CARRA Registry, Training Workshop to Ensure Diversity, Inclusion and Meaningful Participation in Clinical Trials". The ABC Cardiovascular Study Sponsored by FDA, Atlanta, GA. March 11, 2017
31. "SJIA, Research: There is a Role for You!", 2017 JA National Conference, Houston, TX July 14, 2017
32. "CARRA: A Model for Studying Rare Pediatric Diseases". Duke Clinical Research Conference. May 23, 2017
33. "Lupus Outcome Measures and Drug Development," Lupus Federation of America Symposium, Co-Chair.
- 34.

Posters

1. Balevic S, Cohen-Wolkowicz M, Eudy AM, **Schanberg LE**, Clowse MEB. Hydroxychloroquine Level Decreases throughout Pregnancy: Implications for Maternal and Neonatal Outcomes [abstract]. *Arthritis Rheumatol.* 2017; 69 (suppl 10). 2017 ACR/ARHP Annual Meeting.
2. Ringold S, Tomlinson GA, Weiss PF, **Schanberg LE**, Feldman BM, Riordan ME, Dennos AC, Del Gaizo V, Murphy K, Kimura Y. The Childhood Arthritis and Rheumatology Research Alliance Start Time Optimization of Biologic Therapy in Polyarticular JIA Study: Interim Report of Baseline Patient Characteristics and Treatment Choices [abstract]. *Arthritis Rheumatol.* 2017; 69 (suppl 10). 2017 ACR/ARHP Annual Meeting.
3. Ringold S, Tomlinson GA, Weiss PF, **Schanberg LE**, Feldman BM, Riordan ME, Dennos AC, Del Gaizo V, Murphy K, Kimura Y. Baseline characteristics of the first 123 patients enrolled in the Childhood Arthritis and Rheumatology Research Alliance Start Time Optimization of Biologic Therapy in Polyarticular JIA comparative effectiveness study [abstract]. *Arthritis Rheumatol.* 2017; 69 (suppl 4). 2017 Pediatric Rheumatology Symposium.
4. Knight A, Vickery M, Faust L, Muscal E, Davis AM, Harris J, Hersh AO, Rodriguez M, Onel K, **Schanberg LE**, Rubinstein T, Washington N, Weitzman E, Conlon H, Gerstbacher D, Woo J, Von Scheven E. Underutilization of Social Workers for Mental Health Care of Adolescents in Pediatric Rheumatology: A

Mixed Methods Study [abstract]. *Arthritis Rheumatol.* 2017; 69 (suppl 4). 2017 Pediatric Rheumatology Symposium.

5. Ringold S, Xie F, Kimura Y, **Schanberg LE**, Beukelman T. Methotrexate use and route of administration in JIA: Results from the Childhood Arthritis & Rheumatology Research Alliance Registry [abstract]. *Arthritis Rheumatol.* 2017; 69 (suppl 4). 2017 Pediatric Rheumatology Symposium.
6. Cooper JC, Eberhard BA, Punaro M, Ardoin SP, Brunner H, Hsu J, Wagner-Weiner L, Klein-Gitelman M, Rouster-Stevens KA, **Schanberg LE**, von Scheven E. Corticosteroid Regimen Use in the Pilot Study of Consensus Treatment Plans for Induction Therapy in Childhood Proliferative Lupus Nephritis [abstract]. *Arthritis Rheumatol.* 2017; 69 (suppl 4). 2017 Pediatric Rheumatology Symposium.

Grand Rounds

1. "Pain Syndromes in Children," Combined Medicine/Pediatric Grand Rounds, UNC Hospitals, University of North Carolina, Chapel Hill, NC May 1, 1997
2. "Pain Syndromes in Children," Pediatric Grand Rounds, Rex Hospital, Raleigh, NC January 14, 1998
3. "Overview of Duke Pain Initiative" Integrative Medicine Grand Rounds, Duke Medical Center, Durham, NC. September 8, 1999
4. "Juvenile Rheumatoid Arthritis," Grand Rounds, Moses Cone Hospital, Greensboro, NC. April 11, 2001
5. "Fibromyalgia: Concepts in Diagnosis and Treatment," Pain and Palliative Care Grand Rounds, Duke University Medical Center, Durham, NC. July 17, 2001
6. "Chronic Pain Syndromes in Children," Pediatric Grand Rounds, Duke University Medical Center, Durham, NC. August 14, 2001
7. "Thalidomide and Behcets Disease," Pediatric Grand Rounds, Duke University Medical Center, Durham, NC. February 19, 2002
8. "Understanding Pain Syndromes in Children: Non-Rheumatic Musculoskeletal Pain" Pediatric Grand Rounds, Duke University Medical Center, Durham, NC. November 25, 2003
9. "Pain Management in Children: Myths, Reality and Treatments" Grand Rounds, Hackensack University Medical Center, Hackensack, NJ. February 18, 2004
10. "Approach to the Child with Joint Swelling" Grand Rounds, American College of Rheumatology/Research and Educational Foundation Amgen Pediatric Visiting Professorship Program, Gunderson Clinic, LaCrosse, WI September 27, 2007

11. "Update Pediatric SLE", Pediatric Grand Rounds, Duke University Medical Center, Durham, NC December 18, 2007
12. "Clinical Trials in Pediatric Rheumatic Disease: The APPLE Experience" Grand Rounds, Children's Hospital at Montefiore, Bronx, NY February 13, 2008
13. "Treating Pediatric Chronic Pain: Myths and Misconceptions", Pediatric Grand Rounds, Royal University Hospital, Saskatoon, Ontario, Canada September 23, 2010
14. "Common Pediatric Musculoskeletal Pain Syndromes", Pediatric Teaching Rounds, Royal University Hospital, Saskatoon, Ontario, Canada September 23, 2010
15. "Pain Syndromes in Children", Pediatric Grand Rounds, Rex Hospital, Raleigh, NC December 8, 2010
16. "Treating Pediatric Pain - Myths and Misconceptions", Pediatric Grand Rounds, Duke University Medical Center, Durham, NC April 12, 2011
17. "Pediatric Pain Syndromes", ECU Grand Rounds. Greenville, NC May 2012
18. "Research in Pediatric Rheumatic Diseases", The CARRA Network. Grand Rounds, Maria Fareri Childrens Hospital, Valhalla, NY. May 15, 2013
19. "Managing Chronic Pain in Children". Grand Rounds, Nationwide Children's Hospital, Columbus, OH, May 23, 2019
20. "Research in Pediatric Rare Diseases: The CARRA Registry", Grand Rounds, MUSC, Charleston SC, Dec 13, 2019
21. "The CARRA Registry as a Model for Pediatric Rare Disease Research". CHDI Great Minds Think For Kids Seminar Series - Guest Speaker: Laura Schanberg. July 14 2020

Regional Presentations and Posters

1. "Fibromyalgia in Children," 3rd Annual Southeastern Academic Pain Symposium, Grandover Hotel, High Point, NC. October 6, 2002
2. "Pediatric Pain Management". North Carolina Association of Physician Assistants 27th Annual Summer Conference, Myrtle Beach, SC. August 22, 2003

Clinical Activity (2020-2021):

1. Retired from clinical activity April 2020.

Participation in academic and administrative activities of the University and Medical Center:

Administrative Positions

Continuing Medical Education Governing Board	1998 – 2003
Member, Advisory Board, Office of Continuing Medical Education ADMIN	2004 – 2008

Committees

Preceptor, NC Student Rural Health Coalition	1992 – 1999
Member, Department of Pediatrics Quality Improvement Committee	1993 – 2002
Member, Association of Women Faculty	1994 – 1996
House Staff Advisor, Department of Pediatrics	1995 – 1997
Interviewer for Pediatric Residency Training Program	1995 – 2003
Art Selection Committee, Duke University Medical Center	1998 – 2003
Member, Search Committee for Pain Program Director	1999 – 2000
Ad hoc Member, Institutional Committee for Graduate Medical Education	2001 – 2009
Member, Search Committee for Chief, Pediatric Allergy/Immunology	2001
Member, Chronic Disease and Chronic Care Subcommittee, Duke Medical School Curriculum Committee	2001 – 2002
Children's Health Center Operation Workgroup	2003 – 2004
Member, Steering Committee, Duke Immune Mediated Inflammatory Disease Program, Duke University Medical Center	2003 – 2008
Capstone Course Task Force, Duke Medical School Curriculum Committee	2004
Pain Management Oversight Committee (PMOC)	2004 – 2008
Member, Pain Champion Subcommittee of the PMOC	2004 – 2008
Member, Faculty Women's Committee, Duke University Medical Center	2006 – 2008
Member, Search Committee for Psychiatry Department Chair	2008 – 2009
Member, 2011 Research Mentoring Awards Selection Committee	2011 – 2013
Duke AOA Student Membership Selection Process Committee	2011– present

Member, Duke University Athletic Council	2013 – 2016
Member, Task Force On The Way Pain Management is Taught Duke Medical School, Curriculum Committee	2016 – 2018
Member, Pediatric Research Committee	2016 – present
Abstract Reviewer, Pediatric Research Retreat	2022
Member, Pediatric Department Promotions Committee	2022 – present

Leadership Positions

Co-chief, Pediatric Rheumatology	2004 -2017
Chair, Pediatric Department Gala Grant Review	2017 - 2019
Chair, Pediatric Pain Initiative Standards and Guidelines Committee	1997 – 1999
Chair, Faculty Women’s Committee Gallery Design Subcommittee	2006 – 2008
Academic Council, Clinical Sciences Division Alternate Representative	2020-2021

Areas of Research Interests:

1988 – 1997	Investigated the molecular biology of T-cell differentiation. Dr. Russel Kaufman and Dr. Barton Haynes, Department of Medicine, Duke University Medical Center, Durham, North Carolina
1994 – 2000	Investigated pain coping mechanisms and family environment in juvenile fibromyalgia patients and the efficacy of cognitive behavioral therapy in this group. Dr. Francis Keefe, Department of Psychiatry, Duke University Medical Center, Durham, North Carolina.
1995 – Present	Investigating the pain experience and disease symptoms of children with rheumatic disease
1996 – Present	Investigating the relationship of daily stress, mood, and emotion regulation to pain and other disease symptoms, disease activity and functional status in children with juvenile arthritis
2000 – 2017	Investigated the impact of parental beliefs and experiences on child health status in children with chronic rheumatic disease
2002 – 2014	Investigated the effect of statins on the prevention of premature cardiovascular disease in children with SLE in first CARRA clinical trial

- 2009 – Present Pediatric rheumatology registry and safety surveillance
- 2012 – Present Comparative effectiveness of biologic agents for treatment of JIA
- 2019 – present Prevention of disease extension in JIA using abatacept