

Division Photo



Top Row Left to Right: David B. Larson MD, Andrew M. Zbojniewicz MD, Lane F. Donnelly MD [Radiologist-in-Chief], Daniel J. Podberesky MD, Alan S. Brody MD, James L. Leach MD, Christopher G. Anton MD, Mark DiFrancesco PhD, Charles L. Dumoulin PhD

Middle Row Left to Right: Carolina V. Guimaraes MD, Eric J. Crotty MD, Diane S. Babcock MD, Seven J. Kraus MD, Diana Lindquist PhD, Beth M. Kline-Fath MD, John C. Egelhoff DO, Eva I. Rubio MD

Bottom Row Left to Right: Tal Laor MD, Hee Kyung Kim, Alan E. Oestreich MD, Marilyn J. Goske MD, Alexander J. Towbin MD, Robert J. Fleck MD

Division Data Summary

Research and Training Details

Number of Faculty	46
Number of Research Fellows	1
Number of Research Students	3
Number of Support Personnel	225
Direct Annual Grant Support	\$1,162,979
Peer Reviewed Publications	56

Clinical Activities and Training

Number of Clinical Staff	38
Number of Clinical Fellows	9
Number of Other Students	69
Inpatient Encounters	55,215
Outpatient Encounters	160089

Faculty Members

Lane F. Donnelly, MD, Professor ; *Director and Radiologist-in-Chief*

Todd A. Abruzzo, MD, Assistant Professor

Christopher G. Anton, MD, Assistant Professor ; *Division Co-Chief CT*

Diane S. Babcock, MD, Professor Emeritus
Williams S. Ball, MD, Associate Professor
Alan S. Brody, MD, Professor ; *Associate Director, Radiology Research*
Maria A. Calvo, MD, Assistant Professor
Marquerite M. Care, MD, Assistant Professor
Kim M. Cecil, PhD, Professor
Eric J. Crotty, MD, Assistant Professor ; *Director, Pediatric Radiology Fellowship Program*
Mark DiFrancesco, PhD, Assistant Professor ; *Assistant Director, Pediatric Neuroimaging Research Consortium*
Charles L. Dumoulin, PhD, Professor ; *IRC Scientific Director, Imaging Research Center*
John C. Egelhoff, DO, Professor ; *Division Co-Chief, CT*
Kathleen H. Emery, MD, Professor ; *Division Co-Chief, MRI*
Robert J. Fleck, MD, Assistant Professor ; *Division Chief, Cardiac MRI*
Michael J. Gelfand, MD, Professor ; *Division Chief, Nuclear Medicine*
Marilyn J. Goske, MD, Professor ; *Chair, Educational Council*
Carolina Guimaraes, MD, Instructor
Kathy J. Helton-Skally, MD, Assistant Professor
Scott Holland, PhD, Professor ; *Director, Pediatric Neuroimaging Research Consortium*
Neil D. Johnson, MD, Professor
Blaise V. Jones, MD, Associate Professor ; *Director of Clinical Services; Division Chief, Neuroradiology; Division Co-Chief, MRI*
Beth M. Kline-Fath, MD, Assistant Professor ; *Division Chief, Fetal Imaging*
Bernadette L. Koch, MD, Associate Professor ; *Associate Director, Physician Services and Education*
Steven J. Kraus, MD, Associate Professor ; *Division Chief, Radiography and Fluoroscopy*
Kamlesh U. Kukreja, MD, Instructor
David Larson, MD, Assistant Professor
Tal Laor, MD, Professor
James L. Leach, MD, Associate Professor
Leann Linam, MD, Assistant Professor
Diana Lindquist, PhD, Assistant Professor
Michael P. Nasser, MD, Assistant Professor
Alan E. Oestreich, MD, Professor
Sara M. O'Hara, MD, Associate Professor ; *Division Chief, Ultrasound*
Manish N. Patel, MD, Assistant Professor
Daniel J. Podberesky, MD, Assistant Professor
John M. Racadio, MD, Associate Professor ; *Division Chief, Interventional Radiology*
Eva I. Rubio, MD, Assistant Professor
Susan E. Sharp, MD, Assistant Professor
Janet L. Strife, MD, Professor
Vincent J. Schmithorst, PhD, Assistant Professor
Alexander J. Towbin, MD, Assistant Professor ; *Director, Radiology Informatics*
Jennifer Vannest, PhD, Assistant Professor
Janaka Wansapura, PhD, Assistant Professor
Weihong Yuan, PhD, Assistant Professor
Andrew M. Zbojniewicz, MD, Assistant Professor

Clinical Staff Members

- Hee Kyung Kim, MD

Trainees

- Lincoln Diniz, MD, PL6, Goa Medical College, Bambolim-Goa, India
- Michael Fadell, MD, PL6, University of Toledo, HSC
- Neville Irani, MD, PL6, Allegheny General Hospital
- Hee Kyung Kim, MD, PL6, Korea University Gu-ro Hospital, Korea
- Marica Komlos, MD, PL7, Hospital Mae de Deus, Porto Alegre, Brazil
- Patricia E. Ladd, MD, PL6, University of Kansas, Wichita
- Robert C Orth, MD, PL6, University of California San Diego
- Preeyacha Pacharn, MD, PL7, Siriraj Hospital, Mahidol University, Bangkok
- William E. Schaaf, MD, PL6, Eastern Virginia Medical School

Significant Accomplishments

Overview

The Division of Radiology faculty and fellows presented 15 scientific papers and offered 43 workshops and poster sessions at the 2009 Society for Pediatric Radiology meeting, the most presented by any institution. Also at the meeting, division staff won a Caffey Award for Outstanding Clinical Research Paper, "Improving Patient Safety – Effects of a Safety Program on Performance and Culture in a Department of Radiology at a Children's Hospital." Contributors included Lane Donnelly, Julie Dickerson, Martha Goodfriend and Stephen Muething. Marilyn Goske, Rebecca Phillips, Keith Mandel, Richard Gardner, Daniel McLinden and Laurie Perry received a special commendation for their work, "CT Radiation Safety in Children: A National Web-Based Practice Quality Improvement Program." Division director Lane Donnelly, MD, received the Singleton-Taybi Award for Lifetime Achievements in Education at the meeting. Neil Johnson, MD, was named president of the Society for Pediatric Radiology for 2009-2010. Susan Sharp, MD, and Michael Gelfand, MD, received the 2009 Pediatric Imaging Council Young Investigator Award from the Society of Nuclear Medicine for their work, "Utility of SPECT/CT Imaging in Neuroblastoma." William Ball, MD, was awarded the 2009 Gold Medal from the American Society for Pediatric Neuroradiology (ASPNR). The Division of Radiology this year named Charles Dumoulin, PhD, scientific director of the Imaging Research Center (IRC). Dumoulin's research interests are in neonatal MRI and new approaches in accelerating MR scanning. With the help of an NIH S10 shared instrument grant, the IRC purchased a new 3 Tesla MRI scanner, which is being used to lead translational imaging research in child development and disease. Key areas of research within the IRC include the study of language development, environmental neurotoxicity, hearing loss, juvenile arthritis, cardiac abnormalities and brain disorders.

Division Publications

1. Beebe DW, Difrancesco MW, Tlustos SJ, McNally KA, Holland SK. [Preliminary fMRI findings in experimentally sleep-restricted adolescents engaged in a working memory task](#) . *Behav Brain Funct.* 2009; 5: 9.
2. Gelfand MJ. [Dosimetry of FDG PET/CT and other molecular imaging applications in pediatric patients](#) . *Pediatr Radiol.* 2009; 39: S46-S56.
3. Schmithorst VJ. [Developmental sex differences in the relation of neuroanatomical connectivity to intelligence](#) . *Intelligence.* 2009; 37: 164-173.
4. Brody AS, Donnelly LF. [Building a culture of research among clinical pediatric radiologists: a multifaceted, programmatic approach](#) . *Pediatr Radiol.* 2009; 39: 367-70.
5. Dickey M, Jamison L, Michaud L, Care M, Bernstein DI, Staat MA. [Rotavirus meningoencephalitis in a previously healthy child and a review of the literature](#) . *Pediatr Infect Dis J.* 2009; 28: 318-21.
6. Kim HK, Goske MJ, Bove KE, Minovich E. [Segmental testicular infarction in a young man simulating a testicular tumor](#) . *Pediatr Radiol.* 2009; 39: 400-2.
7. Schmithorst VJ, Altes TA, Young LR, Franz DN, Bissler JJ, McCormack FX, Dardzinski BJ, Brody AS. [Automated algorithm for quantifying the extent of cystic change on volumetric chest CT: initial results in Lymphangiomyomatosis](#) . *AJR Am J Roentgenol.* 2009; 192: 1037-44.
8. Vannest JJ, Karunanayaka PR, Altaye M, Schmithorst VJ, Plante EM, Eaton KJ, Rasmussen JM, Holland SK. [Comparison of fMRI data from passive listening and active-response story processing tasks in children](#) . *J Magn Reson Imaging.* 2009; 29: 971-6.

9. Hor KN, Wansapura J, Markham LW, Mazur W, Cripe LH, Fleck R, Benson DW, Gottliebson WM. [Circumferential strain analysis identifies strata of cardiomyopathy in Duchenne muscular dystrophy: a cardiac magnetic resonance tagging study](#). *J Am Coll Cardiol*. 2009; 53: 1204-10.
10. Bulas D, Goske M, Applegate K, Wood B. [Image Gently: improving health literacy for parents about CT scans for children](#). *Pediatr Radiol*. 2009; 39: 112-6.
11. Huang L, Thompson EA, Schmithorst V, Holland SK, Talavage TM. [Partially adaptive STAP algorithm approaches to functional MRI](#). *IEEE Trans Biomed Eng*. 2009; 56: 518-21.
12. Laor T, Crawford AH. [Idiopathic chondrolysis of the hip in children: early MRI findings](#). *AJR Am J Roentgenol*. 2009; 192: 526-31.
13. Oestreich AE. [Worldwide survey of damage from swallowing multiple magnets](#). *Pediatr Radiol*. 2009; 39: 142-7.
14. Racadio JM. [Controlling radiation exposure during interventional procedures in childhood cancer patients](#). *Pediatr Radiol*. 2009; 39 Suppl 1: S71-3.
15. Ball W, Holland S. [The fear of new technology: a naturally occurring phenomenon](#). *Am J Bioeth*. 2009; 9: 14-6.
16. John N, Leach JL, Rachana T, Mangano FT. [Traumatic aneurysm of the occipital artery secondary to paintball injury](#). *Clin Neurol Neurosurg*. 2009; 111: 105-8.
17. Laor T, Jaramillo D. [MR imaging insights into skeletal maturation: what is normal?](#). *Radiology*. 2009; 250: 28-38.
18. Schmithorst VJ. [Higher-order contrast functions improve performance of independent component analysis of fMRI data](#). *J Magn Reson Imaging*. 2009; 29: 242-9.
19. Stevens J, Leach JL, Abruzzo T, Jones BV. [De novo cerebral arteriovenous malformation: case report and literature review](#). *AJNR Am J Neuroradiol*. 2009; 30: 111-2.
20. Donnelly LF. [Imaging issues in CT of blunt trauma to the chest and abdomen](#). *Pediatr Radiol*. 2009; 39 Suppl 3: 406-13.
21. Kim HK, Laor T. [Oblique meniscomeniscal ligament: a normal variant](#). *Pediatr Radiol*. 2009; 39: 634.
22. Vendt BA, McKinstry RC, Ball WS, Kraut MA, Prior FW, Barton B, Casella JF, DeBaun MR. [Silent Cerebral Infarct Transfusion \(SIT\) trial imaging core: application of novel imaging information technology for rapid and central review of MRI of the brain](#). *J Digit Imaging*. 2009; 22: 326-43.
23. Xiang J, Liu Y, Wang Y, Kirtman EG, Kotecha R, Chen Y, Huo X, Fujiwara H, Hemasilpin N, Lee K, Mangano FT, Leach J, Jones B, Degrauw T, Rose D. [Frequency and spatial characteristics of high-frequency neuromagnetic signals in childhood epilepsy](#). *Epileptic Disord*. 2009; 11: 113-25.
24. McNamara RK, Able J, Jandacek R, Rider T, Tso P, Lindquist DM. [Perinatal n-3 fatty acid deficiency selectively reduces myo-inositol levels in the adult rat PFC: an in vivo \(1\)H-MRS study](#). *J Lipid Res*. 2009; 50: 405-11.
25. Guimaraes CV, Linam LE, Kline-Fath BM, Donnelly LF, Calvo-Garcia MA, Rubio EI, Livingston JC, Hopkin RJ, Peach E, Lim FY, Crombleholme TM. [Prenatal MRI findings of fetuses with congenital high airway obstruction sequence](#). *Korean J Radiol*. 2009; 10: 129-34.
26. Bulas DI, Goske MJ, Applegate KE, Wood BP. [Image Gently: why we should talk to parents about CT in children](#). *AJR Am J Roentgenol*. 2009; 192: 1176-8.
27. Donnelly LF, O'Hara SM, Oestreich AE, Rogers LF, Brogdon BG. [Interaction between academic radiology and the news media: a potentially powerful and unpredictable process--five stories](#). *AJR Am J Roentgenol*. 2009; 192: 1382-7.
28. Strauss KJ, Goske MJ, Frush DP, Butler PF, Morrison G. [Image Gently Vendor Summit: working together for better estimates of pediatric radiation dose from CT](#). *AJR Am J Roentgenol*. 2009; 192: 1169-75.
29. Vagal AS, Leach JL, Fernandez-Ulloa M, Zuccarello M. [The acetazolamide challenge: techniques and applications in the evaluation of chronic cerebral ischemia](#). *AJNR Am J Neuroradiol*. 2009; 30: 876-84.
30. Vannest J, Karunanayaka PR, Schmithorst VJ, Szaflarski JP, Holland SK. [Language networks in children: evidence from functional MRI studies](#). *AJR Am J Roentgenol*. 2009; 192: 1190-6.
31. Yuan W, Altaye M, Ret J, Schmithorst V, Byars AW, Plante E, Holland SK. [Quantification of head motion in children during various fMRI language tasks](#). *Hum Brain Mapp*. 2009; 30: 1481-9.
32. Miles L, Degrauw TJ, Dinopoulos A, Cecil KM, van der Knaap MS, Bove KE. **Megalencephalic Leukoencephalopathy with Subcortical Cysts (MLC): a third confirmed case with literature review**. *Pediatr Dev Pathol*. 2009; 12: 180-186.
33. Halsted MJ, Froehle CM. [Design, implementation, and assessment of a radiology workflow management system](#). *AJR Am J Roentgenol*. 2008; 191: 321-7.
34. Leach JL, Meyer K, Jones BV, Tomsick TA. [Large arachnoid granulations involving the dorsal superior sagittal sinus: findings on MR imaging and MR venography](#). *AJNR Am J Neuroradiol*. 2008; 29: 1335-9.

35. Santucci GM, Leach JL, Ying J, Leach SD, Tomsick TA. [Brain parenchymal signal abnormalities associated with developmental venous anomalies: detailed MR imaging assessment](#). *AJNR Am J Neuroradiol*. 2008; 29: 1317-23.
36. Altaye M, Holland SK, Wilke M, Gaser C. [Infant brain probability templates for MRI segmentation and normalization](#). *Neuroimage*. 2008; 43: 721-30.
37. Goske MJ, Applegate KE, Boylan J, Butler PF, Callahan MJ, Coley BD, Farley S, Frush DP, Hernanz-Schulman M, Jaramillo D, Johnson ND, Kaste SC, Morrison G, Strauss KJ. [Image Gently\(SM\): a national education and communication campaign in radiology using the science of social marketing](#). *J Am Coll Radiol*. 2008; 5: 1200-5.
38. Kalnin AJ, Fastenau PS, deGrauw TJ, Musick BS, Perkins SM, Johnson CS, Mathews VP, Egelhoff JC, Dunn DW, Austin JK. [Magnetic resonance imaging findings in children with a first recognized seizure](#). *Pediatr Neurol*. 2008; 39: 404-14.
39. Kim HK, Laor T, Racadio JM. [MR imaging assessment of the lateral head of the gastrocnemius muscle: prevalence of segmental anomalous origins in children and young adults](#). *Pediatr Radiol*. 2008; 38: 1300-5.
40. Patel NC, Cecil KM, Strakowski SM, Adler CM, DelBello MP. [Neurochemical alterations in adolescent bipolar depression: a proton magnetic resonance spectroscopy pilot study of the prefrontal cortex](#). *J Child Adolesc Psychopharmacol*. 2008; 18: 623-7.
41. Towbin AJ. [The CT appearance of intraoral chewing gum](#). *Pediatr Radiol*. 2008; 38: 1350-2.
42. Wall EJ, Vourazeris J, Myer GD, Emery KH, Divine JG, Nick TG, Hewett TE. [The healing potential of stable juvenile osteochondritis dissecans knee lesions](#). *J Bone Joint Surg Am*. 2008; 90: 2655-64.
43. Wang Y, Xiang J, Kotecha R, Vannest J, Liu Y, Rose D, Schapiro M, Degrauw T. [Spatial and frequency differences of neuromagnetic activities between the perception of open- and closed-class words](#). *Brain Topogr*. 2008; 21: 75-85.
44. Wilke M, Holland SK, Altaye M, Gaser C. [Template-O-Matic: a toolbox for creating customized pediatric templates](#). *Neuroimage*. 2008; 41: 903-13.
45. Donnelly LF, Dickerson JM, Lehkamp TW, Gessner KE, Moskovitz J, Hutchinson S. [IRQN award paper: Operational rounds: a practical administrative process to improve safety and clinical services in radiology](#). *J Am Coll Radiol*. 2008; 5: 1142-9.
46. Eltomey MA, Donnelly LF, Emery KH, Levitt MA, Pena A. [Postoperative pelvic MRI of anorectal malformations](#). *AJR Am J Roentgenol*. 2008; 191: 1469-76.
47. DiFrancesco MW, Holland SK, Szaflarski JP. [Simultaneous EEG/functional magnetic resonance imaging at 4 Tesla: correlates of brain activity to spontaneous alpha rhythm during relaxation](#). *J Clin Neurophysiol*. 2008; 25: 255-64.
48. Eliassen JC, Holland SK, Szaflarski JP. [Compensatory brain activation for recognition memory in patients with medication-resistant epilepsy](#). *Epilepsy Behav*. 2008; 13: 463-9.
49. Guimaraes CV, Donnelly LF, Shott SR, Amin RS, Kalra M. [Relative rather than absolute macroglossia in patients with Down syndrome: implications for treatment of obstructive sleep apnea](#). *Pediatr Radiol*. 2008; 38: 1062-7.
50. Tublin ME, Towbin AJ, Federle MP, Nalesnik MA. [Altered liver morphology after portal vein thrombosis: not always cirrhosis](#). *Dig Dis Sci*. 2008; 53: 2784-8.
51. Baskin HJ, Jr.. [The pathogenesis and imaging of the tuberous sclerosis complex](#). *Pediatr Radiol*. 2008; 38: 936-52.
52. Calvo-Garcia MA, Campbell KM, O'Hara SM, Khoury P, Mitsnefes MM, Strife CF. [Acquired renal cysts after pediatric liver transplantation: association with cyclosporine and renal dysfunction](#). *Pediatr Transplant*. 2008; 12: 666-71.
53. DiFrancesco MW, Rasmussen JM, Yuan W, Pratt R, Dunn S, Dardzinski BJ, Holland SK. [Comparison of SNR and CNR for in vivo mouse brain imaging at 3 and 7 T using well matched scanner configurations](#). *Med Phys*. 2008; 35: 3972-8.
54. Gelfand MJ, Gruppo RA, Nasser MP. [Ventilation-perfusion scintigraphy in children and adolescents is associated with a low rate of indeterminate studies](#). *Clin Nucl Med*. 2008; 33: 606-9.
55. Roach ES, Golomb MR, Adams R, Biller J, Daniels S, Deveber G, Ferriero D, Jones BV, Kirkham FJ, Scott RM, Smith ER. [Management of stroke in infants and children: a scientific statement from a Special Writing Group of the American Heart Association Stroke Council and the Council on Cardiovascular Disease in the Young](#). *Stroke*. 2008; 39: 2644-91.
56. Tillema JM, Byars AW, Jacola LM, Schapiro MB, Schmithorst VJ, Szaflarski JP, Holland SK. [Reprint of "Cortical reorganization of language functioning following perinatal left MCA stroke" \[Brain and Language 105 \(2008\) 99-111\]](#). *Brain Lang*. 2008; 106: 184-94.

Grants, Contracts, and Industry Agreements

Grant and Contract Awards

Annual Direct / Project Period Direct

BALL, W

Silent Cerebral Infarct Multi-Center Clinical Trial

National Institutes of Health (Washington University)

U01 NS 042804

09/30/03 - 06/30/10

\$12,052 / \$145,600

CTSA: Imaging Research

National Institutes of Health (University of Cincinnati)

U11 RR 026314

04/03/09 - 03/13/14

\$24,238 / \$24,238

BRODY, A

High-Resolution Computed Tomography CF Lung Disease

Cystic Fibrosis Foundation Therapeutics, Inc.

TRAPNE03Y2

04/01/03 - 10/31/09

\$93,839 / \$389,480

Pulmonary Benefit of Cystic Fibrosis Neonatal Screening

National Institutes of Health (University of Wisconsin-Madison)

R01 DK 034108

01/01/07 - 12/31/11

\$6,026 / \$57,845

CECIL, K

Bipolar Disorder Imaging and Treatment Research Center

National Institutes of Health (University of Cincinnati)

P50 MH 077138

07/01/07 - 06/30/12

\$88,069 / \$407,685

Neurofunctional and Neurochemical Markers of Treatment Response in Early Onset Bipolar Mania

National Institutes of Health (University of Cincinnati)

R01 MH 078043

08/14/07 - 05/31/12

\$11,676 / \$74,215

Early Lead Exposure, ADHD and Persistent Criminality

National Institutes of Health (University of Cincinnati)

R01 ES 015559

06/01/07 - 03/31/12

\$156,621 / \$740,306

DUMOULIN, C

MR-Image Guided Focused Ultrasound for Treatment of Liver and Renal Cancer

National Institutes of Health (Stanford University)

R01 CA 121163

04/01/09 - 03/31/11

\$66,667 / \$100,000

GOSKE, M

CT Radiation Safety in Children: A Model for National Web-Based Continuous Quality Improvement Program

Society of Pediatric Radiology

08/01/08 - 07/31/09

\$40,000 / \$40,000

HOLLAND, S

FMRI, Genes and Outcome for Cochlear Implants in Infants

National Institutes of Health

R01 DC 007186

12/01/04 - 11/30/09

\$321,973 / \$1,635,025

FMRI of Normal Language Development in Children

National Institutes of Health

R01 HD 038578

08/01/06 - 06/30/11

\$142,737 / \$750,000

FMRI of Language Recovery Following Stroke in Adults

National Institutes of Health (University of Cincinnati)

R01 NS 048281

09/30/08 - 07/31/13

\$23,823 / \$119,115

LINDQUIST, D

Estimating Intracellular Lithium in Brain in vivo 7Li MRS

National Institutes of Health (University of Cincinnati)

R21 MH 008100

02/01/09 - 11/30/09

\$49,535 / \$49,535

SCHMITHORST, V

Cortical Reorganization in Children with Unilateral Sensorineural Hearing Loss

Current Year Direct

\$1,162,979

Total \$1,162,979
