



MPRINT Newsletter

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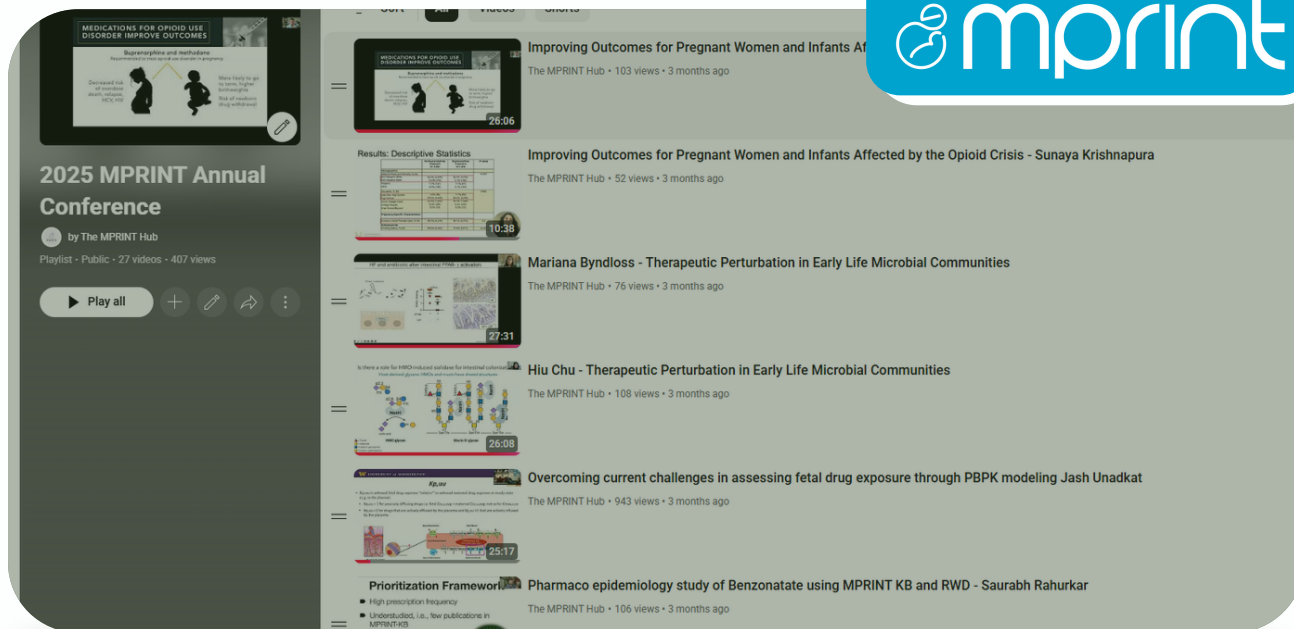
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MPRINT ANNUAL MEETING

The MPRINT 2025 Annual Meeting was held virtually this year, which allowed us to collaborate with attendees all over the world. Even more people have been able to enjoy the meeting through our YouTube playlist of presentations.

MPRINT 2026 Annual Meeting

April 13-17, 2026

The MPRINT Annual Meeting will be in Indianapolis, Indiana in conjunction with the Indiana CTSI Pharmacometrics Modeling & Simulation Symposium.

MORE INFO COMING SOON!

SUCCESSES

YouTube

The playlist of presentations from the meeting has been viewed over 400 times!

Collaborative Document

Attendees joined together to create a shared record of notes from the meeting.

ACCESS THE MEETING NOTES!

Global Attendance

We had people join us from Africa, Europe, and all across the United States.



[MPRINT Annual Meeting Playlist](#)



[May 13-17, 2026](#)



MPRINT CO-HOSTS CFDE SUMMER SCHOOL COLLABORATIVE LEARNING IN ACTION

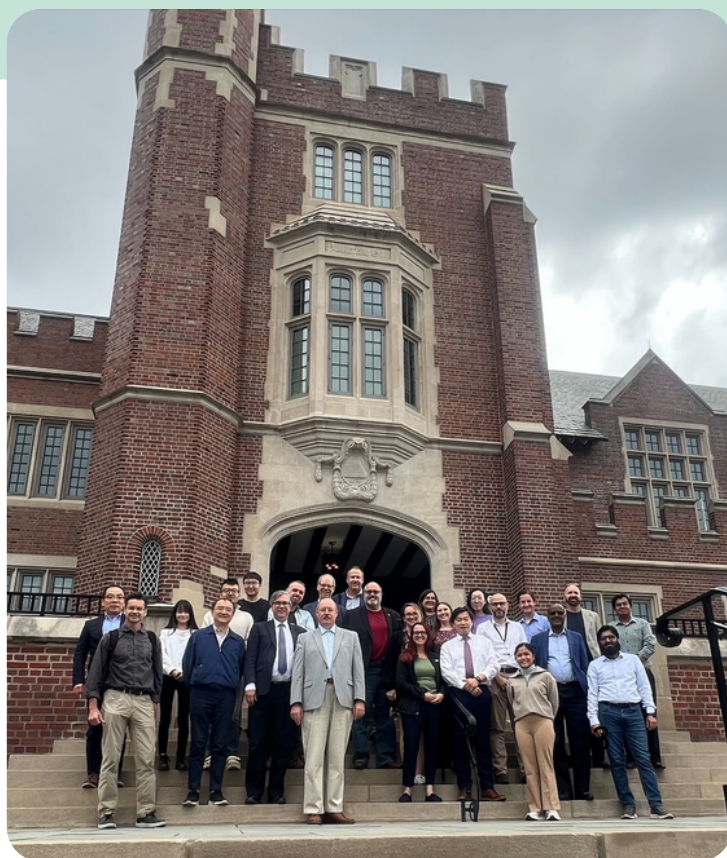
In August, MPRINT co-hosted the Common Fund Data Ecosystem (CFDE) Summer School at Indiana University School of Medicine, bringing together students and experts to explore the intersection of physiology and pharmacokinetics. Participants used Bond Graph methods and CFDE knowledge bases to develop mechanistic models for Physiology-Based Pharmacokinetic (PB-PK) Transport, applying real-world scenarios from our MPRINT Hub community, including glucose control and drug pharmacokinetics in pregnancy.

We extend our gratitude to attendees from Indiana University School of Medicine, Purdue University, The Ohio State University, and University at Buffalo; to our expert speakers Bernard de Bono, Peter Hunter, Rossana Occhipinti, and David Nickerson; and to our co-hosts Sara Quinney and Megan Creasser. This collaborative effort exemplifies the power of teamwork in advancing translational biomedical research and education.

DMKRCC RETREAT

The Data, Model, Knowledge and Research Coordinating Center (DMKRCC) recently held its annual retreat at The Ohio State University. The retreat brought together investigators, collaborators, and partners to review progress from the past year and plan next steps for advancing maternal and pediatric precision therapeutics.

During the sessions, teams shared updates on current initiatives, discussed opportunities to strengthen collaboration across the network, and set priorities for the coming year. These conversations are critical for ensuring that the DMKRCC continues to provide resources, data, and expertise to support innovative research across the MPRINT hub-and-spoke network. We look forward to building on this momentum in the year ahead.



MPRINT ACADEMY

We are excited to announce the upcoming launch of the **MPRINT Academy Video Series**, a new educational resource designed to support trainees and early-career investigators in maternal and pediatric therapeutics.

This series will provide accessible, high-quality content on topics including:

- Maternal and pediatric pharmacology
- Multi-center studies and industry partnerships
- Clinical trial design
- Building multidisciplinary teams
- Pharmacometric methods
- Navigating career development and the evolving research landscape

Two video formats will be available:

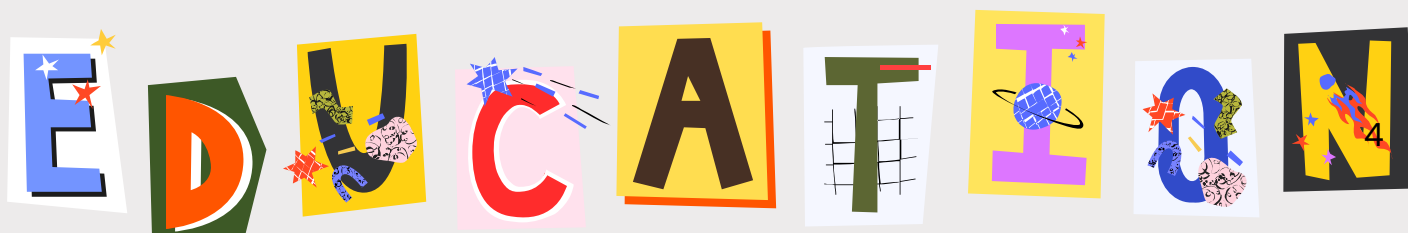
- Short tutorials (3–10 minutes): concise, focused learning on specific topics
- Long-form sessions (up to 45 minutes) featuring in-depth explorations and comprehensive presentations



The videos will be shared on the MPRINT YouTube channel, where trainees can access curated playlists tailored to specific learning areas such as PK/PD, clinical research, omics studies, and professional skill development.

Our goal is to build a sustainable library of resources that helps the next generation of researchers prepare for impactful careers in maternal and pediatric therapeutics.

Stay tuned as we begin releasing videos in the coming months. If you have suggestions for topics or speakers, we welcome your input!



MPRINT at the ACCP Annual Meeting

Several of our MPRINT PIs teamed up with other maternal-pediatric researchers to discuss resources and strategies (including those created by MPRINT) to support clinical pharmacology research in these critically underrepresented populations at the American College of Clinical Pharmacology Annual Meeting in Phoenix, AZ.



**Sara
Quinney**



**Catherine
Sherwin**



**Rob
Bies**



**Angela
Birnbaum**



**Lang
Li**



**Raman
Venkataramanan**



**Kevin
Watt**

**Revolutionizing Clinical
Pharmacology in
Maternal & Pediatric
populations:
Vital Resources &
Innovative Strategies**



Upcoming Webinars and Events

Principles of Pediatric Clinical Pharmacology Webinar Series



The 2025-20256 MPRINT webinar series is in partnership with the Clinical Pharmacology Training Network (CPTN), an NICHD program that supports training the next generation of clinical pharmacologists in neglected subfields such as pediatrics.

LEARN MORE



Pediatric Developmental Safety Assessment and New Approach Methodologies

December 5, 2025

The U.S. Food and Drug Administration is co-sponsoring a hybrid workshop with the Triangle Center of Excellence in Regulatory Science and Innovation.

FDA


Triangle
CERSI

LEARN MORE



MPRINT PUBLICATIONS

Chao Yan, Monika E Grabowska, Rut Thakkar, Alyson L Dickson, Peter J Embí, QiPing Feng, Joshua C Denny, Vern Eric Kerchberger, Bradley A Malin, Wei-Qi Wei, **Beyond Phecodes: leveraging PheMAP to identify patients lacking diagnosis codes in electronic health records**, Journal of the American Medical Informatics Association, 2025.
<https://doi.org/10.1093/jamia/ocaf055>

Krishnapura SR, McNeer E, Loch SF, et al. **Buprenorphine Treatment in Pregnancy and Maternal-Infant Outcomes**. JAMA Health Forum. 2025;6(4):e251814.
doi:10.1001/jamahealthforum.2025.1814

Simone Zuffa, Sydney P. Thomas, Ipsita Mohanty, Yasin El Abiead, Victoria Deleray, Kine Eide Kvitne, Armin Kousha, Emi Suzuki, Chih Ming Tsai, Griffith Nguyen, Benjamin Ho, George Y. Liu, Victor Nizet, Pieter C. Dorrestein, Fatemeh Askarian, Shirley M. Tsunoda. **Influence of perinatal ampicillin exposure on maternal fecal microbial and metabolic profiles**, bioRxiv 2025.06.30.662372 <https://doi.org/10.1101/2025.06.30.662372>

Kine Eide Kvitne, Celeste Allaband, Jennifer C. Onuora, Daniela Perry, Simone Zuffa, Lucas Patel, Vincent Charron-Lamoureux, Ipsita Mohanty, Kristija Sejane, Abubaker Patan, Abdullah Al Mahmud, Tahmeed Ahmed, Diego G. Bassani, Antonio González, Davidson H. Hamer, Rashidul Haque, Benjamin Ho, Md Iqbal Hossain, Mohammad Shahidul Islam, Daniel McDonald, Lisa G. Pell, Huma Qamar, Daniel E. Roth, Samir Saha, Prakesh S. Shah, Md Muniruzzaman Siddiqui, Shafiqul Alam Sarker, Shamima Sultana, Sydney Thomas, Lindsey A. Burnett, Shirley M. Tsunoda, Lars Bode, Pieter C. Dorrestein, Rob Knight. **Environmental and Maternal Imprints on Infant Gut Metabolic Programming**, bioRxiv 2025.07.24.666662; <https://doi.org/10.1101/2025.07.24.666662>

Kine Eide Kvitne, Simone Zuffa, Vincent Charron-Lamoureux, Ipsita Mohanty, Abubaker Patan, Helena Mannocho-Russo, Jasmine Zemlin, Lindsey A. Burnett, Lisa S. Zhang, Mia C. Cecala, Ceylan Ersoz, James A. Connelly, Natasha Halasa, Maribeth Nicholson, Pieter C. Dorrestein, Shirley M. Tsunoda, Janet Markle. **Fecal Microbial and Metabolic Signatures in VEO-IBD: Implications for Unique Pathophysiology**. bioRxiv 2025.04.26.650779
<https://doi.org/10.1101/2025.04.26.650779>

Jaquish, A., Phung, E., Gong, X. et al. **Mammary intraepithelial lymphocytes and intestinal inputs shape T cell dynamics in lactogenesis**. Nat Immunol 26, 1411–1422 (2025). <https://doi.org/10.1038/s41590-025-02218-3>

Byington CL, Stellwagen L, Bode L, Hooshmand M, Pizzo DP, Russo H, Gonias SL (2025) **Milk as Transmission Vehicle for Highly Pathogenic Avian Influenza A (H5N1)** Pediatrics (Accepted)

Turner SE, Roos L, Nickel NC, Moraes TJ, Turvey SE, Simons E, Subbarao P, Robertson B, Chikuma J, Goruk S, Field CJ, Bode L, Pei J, Mandhane PJ, Azad MB (2025) **Examining Associations between Human Milk Fatty Acids, Oligosaccharides, and Early Infant Cognitive, Language and Motor Development in the CHILD Cohort Study.** Frontiers in Nutrition (Accepted)

Van Schalkwyk M, Bekker A, Decloedt E, Wang J, Theron GB, Cotton MF, Eke AC, Cressey TR, Wabwire D, Shapiro DE, Bacon K, Knowles K, George K, Browning R, Chakhtoura N, Rungruengthanakit K, Wiesner L, Capparelli EV, Stek AM, Mirochnick M, Best BM, on behalf of the IMPAACT P1026s Protocol Team. **Pharmacokinetics of first-line tuberculosis drugs in pregnancy and postpartum with and without efavirenz-based antiretroviral treatment:** IMPAACT P1026s study. 2025. Antimicrob Agents Chemother, Forthcoming.

Simone Zuffa, Sydney P. Thomas, Ipsita Mohanty, Yasin El Abiead, Victoria Deleray, Kine Eide Kvitne, Armin Kousha, Emi Suzuki, Chih Ming Tsai, Griffith Nguyen, Benjamin Ho, George Y. Liu, Victor Nizet, Pieter C. Dorrestein, Fatemeh Askarian, Shirley M. Tsunoda. **Influence of perinatal ampicillin exposure on maternal fecal microbial and metabolic profiles,** bioRxiv 2025.06.30.662372; doi: <https://doi.org/10.1101/2025.06.30.662372>

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Sun D, Haste NM, Sun J, Serafim MSM, Salvioni A, Olson J, Cole J, Okumura C, Gallo RL, Sakoulas G, O'Donoghue AJ, Hensler ME, Nizet V. **Repurposing Diflunisal as an Antivirulence Agent Against Staphylococcus aureus.** Infect Microbes Dis. 2025 Mar;7(1):43-53. doi: 10.1097/im9.0000000000000174. Epub 2025 Jan 27. PMID: 40808982; PMCID: PMC12345599.

Kumaraswamy M, Riestra AM, Flores A, Dahesh S, Askarian F, Uchiyama S, Monk J, Jung S, Bondsäter G, Nilsson V, Chang M, Bulitta JB, Lang Y, Kousha A, Bjånes E, Chavarria N, Clark T, Seo H, Sakoulas G, Nizet V. **Colistin exerts potent activity against mcr+ Enterobacteriaceae via synergistic interactions with the host defense.** J Clin Invest. 2025 Apr 22;135(12):e170690. doi: 10.1172/JCI170690. PMID: 40261712; PMCID: PMC12165787.

Antoon JW, et al. **Influenza With and Without Oseltamivir Treatment and Neuropsychiatric Events Among Children and Adolescents.** JAMA Neurol. 2025 Aug 4:e251995.

Perrin MT, Mansen K, Israel-Ballard K, Bode L, Hampel D, Shahab-Ferdows S, Allen LH, Cofré Maggio F, Njuguna E, Tran HT, Wesolowska A (2025) **A Cross-Sectional Study of Macronutrients, Vitamins, Minerals, and Bioactive Components in the Human Milk of Approved Milk Bank Donors from Low- Middle- and High-Income Countries.** American Journal of Clinical Nutrition (Accepted)

Nyquist SK, Annepureddy SD, Sejane K, Furst A, Trahan GD, Rudolph MC, Twigger AJ, Bode L, Engelhardt BE, Martin Carli JF, Goods BA (2025) **Integrated 'omics analysis reveals human milk oligosaccharide biosynthesis programs in human lactocytes.** iScience (Accepted)

Schenk S, Simon MC, Bode L, Jensen SR, Schönknecht YB (2025) **Systemic Availability of Human Milk Oligosaccharides in Infants and Adults: A Narrative Review.** Advances in Nutrition (Accepted)

Davis A, Lee S, Hampel D, Shahab-Ferdows S, Allen LH, Bode L, Mansen K, Israel-Ballard K, Perrin MT (2025) **The Impact of Holder Pasteurization on Macronutrients, Vitamins, Minerals and Bioactive Factors in Human Milk Processed in a Milk Bank Setting.** Current Developments in Nutrition (Accepted)

McCune S, Stellwagen L, Byington CL, Wolf A, Nguyen N, Bode L (2025) **Bacillus pre-pasteurization screening protocol reduces donor human milk loss.** Breastfeeding Medicine (Accepted)

Rubinstein RJ, Vielot NA, Edwards J, Reyes Y, González F, Toval-Ruiz C, Gutiérrez L, Vilchez S, Sandler RS, Bode L, Becker-Dreps S, Bucardo F (2025) **Human milk oligosaccharides and Campylobacter jejuni and Campylobacter coli gastroenteritis risk in a Nicaraguan birth cohort.** American Journal of Clinical Nutrition(Accepted)

Samarra A, Renwick S, Arzamasov AA, Rodionov DA, Spann K, Cabrera-Rubio P, Acuna-Gonzalez A, Martínez-Costa C, Hall L, Segata S, Osterman AL, Bode L, Collado MC (2025) **Human Milk Oligosaccharide Metabolism and Antibiotic Resistance in Early Gut Colonizers: Insights from Bifidobacteria and Lactobacilli in the Maternal-Infant Microbiome.** Gut Microbes 17(1):2501192

Arzamasov AA, Rodionov DA, Hibberd MC, Guruge JL, Kent JE, Kazanov MD, Leyn SA, Elane M, Sejane K, Furst A, Bode L, Barratt MJ, Gordon JI, Osterman AL (2025) **Integrative genomic reconstruction of carbohydrate utilization networks in bifidobacteria: global trends, local variability, and dietary adaptation.** Nature Microbiology

Coley-O'Rourke EJ, Lum GR, Pronovost GN, Yu LW, Özcan E, Yu KB, McDermott J, Chakhoyan A, Goldman E, Vuong HE, Paramo J, McCune S, Sejane K, Renwick S, Bode L, Chu A, Calkins K, Hsiao EY (2025) **Murine maternal microbiome modifies adverse effects of protein undernutrition on offspring neurobehavior.** Nature Microbiology 10(7):1648–1664

Hellinga AH, Zuurveld M, Mank M, Kraneveld AD, Garssen J, Spann K, Bode L, Willemsen LEM, van't Land B (2025) **Secretor and non-secretor human milk oligosaccharides differentially modulate immune response in the presence of cow's milk allergen β -lactoglobulin in an in vitro sensitization model.** Frontiers in Immunology 16:1575656

Iannella N, Momper J, Mirochnick M, Suhandynata RT, Saia K, Werler M, Jones HE, Wachman EM. **Pharmacokinetics of Oral and Extended-release Naltrexone in Pregnant and Lactating Individuals and their Infants.** J Addict Med. 2025 May 19. Online ahead of print. PMID: 40388713

Nelson-Rodriguez A, Saia K, Xie X, Momper J, Schiff DM, Wachman EM. **Pharmacokinetics and Breast Milk Transfer to Infants of Subcutaneous Extended-Release Buprenorphine for the Treatment of Individuals with Opioid Use Disorder.** Breastfeed Med. 2025 Aug;20(8):588–592. PMID: 40358655

Shendre A, Liu X, Chiang C, Goodwin A, Oteng SR, Deypalubos JAF, Zhang S, Wang L, Liu J, Abbasi MY, Aruldas BW, Zaidi SS, Kirkpatrick LM, Silva LD, Overholser BR, O'Kane AM, Kannankeril PJ, Patrick SW, Wiese AD, Quinney SK, Li L. **Pharmacotherapy research landscape and knowledge gaps of opioids in maternal and pediatric populations.** Pharmacotherapy. 2025 Jun;45(6):367–385. doi: 10.1002/phar.70024. Epub 2025 May 15. PMID: 40371673; PMCID: PMC12149789.

Sunthankar SD, et al. **Methylprednisolone for Infant Heart Surgery: Subpopulation Analyses of a Randomized Controlled Trial.** Crit Care Med. 2025 Jul 1;53(7):e1470–e1480.

Sunthankar SD, et al. **Reexploring the STRESS Trial: Subgroup Postoperative Outcomes Following Methylprednisolone for Infant Heart Surgery.** Pediatr Cardiol. 2025 May 2;10.1007/s00246-025-03875-9.

Yan C, Grabowska ME, et al. **Beyond Phecodes: leveraging PheMAP to identify patients lacking diagnosis codes in electronic health records.** J Am Med Inform Assoc. 2025 Jun 1;32(6):1007–1014.

Girvin Z, Gangireddy S, Coleman A, Ong H, Wei WQ, Kannankeril PJ, Sunthankar SD. **Leveraging Natural Language Processing for Echocardiographic Data Extraction in Hypoplastic Left Heart Syndrome.** J Am Soc Echocardiogr. 2025 Jun;38(6):529–531. doi: 10.1016/j.echo.2025.02.010. Epub 2025 Mar 18. PMID: 40112958.