

International Meeting on Lipid Mediators in Health and Disease

Jointly organized by
Eicosanoid Research Foundation
and
Winter Eicosanoid Conference

October 8 – 10, 2025
The Natcher Center, NIH, Bethesda, MD

Program

Wednesday, October 8, 2025

8:00 – 9:00 AM
Registration

9:00 – 9:10 AM
Opening Remarks (Charles N. Serhan, and Darryl C. Zeldin)

9:10 – 9:55 AM

Honn-McGiff Lifetime Achievement Award

presentation and lecture:

Awardee: **Lawrence J. Marnett**, Vanderbilt University School of Medicine, Nashville, TN, USA.

COX-2: Endocannabinoid Cross-talk in the Modulation of Endocannabinoid Signaling and Generation of Bioactive Lipids (Abstract 1)

Wednesday, October 8, 2025 program continued on next page...

Wednesday, October 8, 2025

10:00 AM – 12:30 PM

Session 1: Prostaglandins & Leukotrienes

(Sponsored by Cayman Chemical Company)

Chair: Darryl C. Zeldin, NIEHS/NIH, Research Triangle Park, NC

10:00 – 10:30 AM: Plenary talk: **Jesper Z. Haeggström**, Karolinska Institute, Stockholm, Sweden: *The leukotriene pathway, immune modulation at atomic resolution.* (Abstract 2)

10:30 – 10:50 AM: **Daniel Menendez**, NIEHS, Research Triangle Park, NC, USA. *A Molecular Cell Atlas of Mouse Ovalbumin-induced Allergic Lung Inflammation Identifies a Novel CD4⁺CD8⁺ T Cell Population Regulated by COX-2.* (Abstract 3)

10:50 – 11:10 AM: **K. Sandeep Prabhu**, Penn State University, University Park, PA, USA. *Redox regulation of Rac1-mTOR-dependent cyclooxygenase-1 expression in macrophages during resolution of inflammation.* (Abstract 4)

11:10 – 11:30 AM: **Mike Malkowski**, University of Buffalo, Buffalo, NY, USA. *The Role of Structural Asymmetry in the Allosteric Regulation of Cyclooxygenase-2.* (Abstract 5)

11:30 – 11:45 AM: **Lakshminarayan Reddy Teegala**, University of Toledo, Toledo, OH, USA. *CysLT1R Promotes LPS-induced Inflammation and Sepsis via Macrophage Metabolic Reprogramming.* (Abstract 6)

11:45 AM – 12:00 Noon: **Jun Nagai**, Brigham and Women's Hospital, Boston, MA, USA. *CysLT2 receptor signaling works as a checkpoint molecule to suppress leukotriene-dependent mast cell activation and type 2 lung inflammation through a novel Gβγ-dependent mechanism.* (Abstract 7)

12:00 Noon – 12:30 PM: **Discussion on the session talks**

12:30 – 2:00 PM

Lunch and Poster Viewing

(please see the poster presentation schedule at the end of the podium presentation schedule)

Wednesday, October 8, 2025 program continued on next page...

2:00 – 5:00 PM

Session 2: Lipid Mediators in Cancer

(Sponsored by Solutex)

Chair: Dipak Panigrahy, Beth Israel Deaconess Medical Center, Harvard University, Boston, MA

2:00 – 2:30 PM: Plenary talk: **Dipak Panigrahy**, Beth Israel Deaconess Medical Center, Harvard University, Boston, MA: *SPMs & the Resolution of Cancer Inflammation*. (Abstract 8)

2:30 – 3:00 PM: Plenary talk: **Imad Shureiqi**, Michigan Medicine, Ann Arbor, MI, USA. *Necessity of 15-lipoxygenase-1 for colonic resolvin production to suppress colorectal carcinogenesis*. (Abstract 9)

3:00 – 3:20 PM: **Daiki Hayashi**, Kobe University, Kobe, Hyogo, Japan. *The mechanistic role of group VIA iPLA2 in ferroptosis suppression in cancer cells*. (Abstract 10)

3:20 – 3:40 PM: **Ganesh Halade**, University of South Florida, Tampa, FL, USA. *Integrative Lipidomic and Transcriptomic Profiling Reveals ALOX5 Dysfunction Drives Unresolved Inflammation in Colorectal Cancer*. (Abstract 11)

3:40 – 4:00 PM: **Neelam Sharma-Walia**, Rosalind Franklin University, North Chicago, IL, USA. *Lipoxin A4 treatment exhibited anti-angiogenic and anti-inflammatory effects on Kaposi's sarcoma-associated herpesvirus (KSHV)-related primary effusion lymphoma (PEL) tumors in NOD/SCID mice*. (Abstract 12)

4:00 – 4:15 PM: **Siddabasave Gowda Bomme Gowda**, Hokkaido University, Sapporo, Hokkaido, Japan. *Lipid biomarker analysis for neurodegenerative diseases*. (Abstract 13)

4:15 – 4:30 PM: **Sugasini Dhavamani**, University of Illinois at Chicago, Chicago, IL, USA. *Phosphatidylcholine Eicosapentaenoic acid uptake and its metabolites and anti-inflammatory effects of molecular forms of omega-3 fatty acids in microglia: a novel finding*. (Abstract 14)

4:30– 5:00 PM: **Discussion on the session talks**

5:00 – 6:00 PM

Poster Discussion

(please see the poster presentation schedule at the end of the podium presentation schedule)

Thursday, October 9, 2025

8:00 – 9:00 AM

Information session for new investigators

Presented by Victor Garcia

9:00 AM – 12:00 Noon

Session 3: Cytochrome P450 Metabolism of PUFA

(Sponsored by NIEHS)

Chair: Darryl C. Zeldin, NIEHS/NIH, Research Triangle Park, NC

9:00 – 9:30 AM: Plenary talk: **Michal Laniado Schwartzman**, New York Medical College, Yorktown Heights, NY, USA. *The role of GPR75, the high affinity 20-HETE receptor, in obesity and cardiometabolic complications.* (Abstract 15)

9:30 – 10:00 AM: Plenary talk: **Ingrid Fleming**, Goethe University, Frankfurt, Germany. *PUFA diols promote lymphangiogenesis via AMPK activation and β -oxidation.* (Abstract 16)

10:00 – 10:20 AM: **Aditi Das**, Georgia Institute of Technology, Atlanta, GA, USA. *Lipidated Neurotransmitters as Dual-Acting Anti-Inflammatory Agents: Structure, Metabolism, and Receptor Signaling.* (Abstract 17)

10:20 – 10:40 AM: **Victor Garcia**, New York Medical College, Valhalla, NY, USA. *The Emerging Role of the 20-HETE/GPR75 Axis in the Pathogenesis of Liver Disease: From Mechanism to Therapeutic Potential.* (Abstract 18)

10:40 – 11:00 AM: **Raymond Koehler**, Johns Hopkins University, Baltimore, MD, USA. *Sex-dependent Cyp4a gene expression and role of 20-HETE in outcome from ischemic stroke.* (Abstract 19)

11:00 – 11:15 AM: **Pei-an (Betty) Shih**, University of California, San Diego, La Jolla, CA, USA. *PUFA-Dependent Soluble Epoxide Hydrolase Dysregulation Links Lipid Metabolism to Anorexia Nervosa Psychopathology.* (Abstract 20)

11:15 – 11:30 AM: **Zhijun Guo**, University of Minnesota, Minneapolis, MN, USA. *The hexyl cuban-1-yl biguanide C5F2-HCB inhibits CYP3A4-mediated (\pm)-14,15 EET biosynthesis and when delivered in PEG400 reverses immune exclusion of the ovarian dependent SSM2ucd mammary carcinoma allograft while inhibiting tumor growth.* (Abstract 21)

11:30 AM – 12:00 Noon: **Discussion on the session talks**

12:00 Noon – 2:00 PM

Lunch and Poster Viewing

(please see the poster presentation schedule at the end of the podium presentation schedule)

Thursday, October 9, 2025 program continued on next page....

2:00 – 5:00 PM

Session 4: Resolution of Inflammation
(Sponsored by OSE Immuno Therapeutics)

Chair: Charles N. Serhan, Mass General Brigham, Harvard Medical School, Harvard School of Dental Medicine, Harvard University, Boston, MA

- 2:00 – 2:30 PM: Plenary talk: **Patricia Sime**, Virginia Commonwealth University, Richmond, VA, USA. *SPMs in Airway Inflammation: opportunities for therapy.* (Abstract 22)
- 2:30 – 3:00 PM: Plenary talk: **Bruce Levy**, Mass General Brigham, Harvard Medical School, Harvard University, Boston, MA, USA. *Environmental Influences on the Resolution Of Lung Infection and Inflammation* (Abstract 23)
- 3:00 – 3:20 PM: **Thayse Bruggemann**, BWH and Harvard Medical School, Boston, MA, USA. *Traffic-emitted ultrafine particles disrupt macrophage efferocytosis and resolution of allergic lung inflammation.* (Abstract 24)
- 3:20 – 3:40 PM: **Megan Falsetta**, The University of Rochester, Rochester, NY, USA. *The lipid response to oxidative stress may be dysregulated in vulvodynia further exacerbating resolution failures.* (Abstract 25)
- 3:40 – 4:00 PM: **Ru-Rong Ji**, Duke University Medical Center, Chapel Hill, NC, USA. *Protectin DX resolves fracture-induced postoperative pain via GPR37 activation, macrophage efferocytosis, and neuronal signaling.* (Abstract 26)
- 4:00 – 4:15 PM: **Yan Lin**, Duke University, Durham, NC, USA. *Lung pathophysiology and nasal lipid mediators in health and mild asthma.* (Abstract 27)
- 4:15 – 4:30 PM: **Robert Nshimiyimana**, BWH and Harvard Medical School, Boston, MA, USA. *Synthesis and biosynthetic transformation of epoxy resolvins to potent pro-resolving mediators.* (Abstract 28)
- 4:30– 5:00 PM: **Discussion on the session talks**

5:00 – 6:00 PM
Poster Discussion

(please see the poster presentation schedule at the end of the podium presentation schedule)

Friday, October 10, 2025

8:30 AM – 12:00 Noon

Session 5: Metabolipidomics
(Sponsored by ONO Pharma)

Chair: Edward A. Dennis, University of California – San Diego, La Jolla, CA

- 8:30 – 9:00 AM: Plenary talk: **Takao Shimizu**, National Institute of Global Health and Medicine, Shinjuku, Tokyo, and Institute of Microbial Chemistry, Shinagawa, Tokyo, Japan. *Roles of DHA and DHA-containing lipids in brain functions*. (Abstract 29)
- 9:00 – 9:30 AM: Plenary talk: **Makoto Arita**, RIKEN Center for Integrative Medical Sciences, Yokohama, Kanagawa, Japan. *Lipidome atlas associated with aging and the host-microbiome interactions*. (Abstract 30)
- 9:30 – 10:00 AM: Plenary talk: **Edward Dennis**, University of California, San Diego, La Jolla, CA, USA. *Lipidomics profiling of complex lipids identifies the specificity of phospholipase A₂'s in releasing PUFAs and of eicosanoids in plasma identifies fatty liver disease* (Abstract 31)
- 10:00 – 10:20 AM: **Joan Claria**, Hospital Clinic de Barcelona, Barcelona, Catalonia, Spain. *Blood multi-omics identify molecular features of dysregulated formation of lipid mediators and mitochondrial dysfunction associated with the outcome of acutely decompensated cirrhosis*. (Abstract 32)
- 10:20 – 10:40 AM: **Philip J. Kingsley**, Vanderbilt University, Nashville, TN, USA. *An LC-MS/MS method for the analysis of phosphatidylinositol and phosphatidylinositol phosphate species from activated RAW264.7 cells*. (Abstract 33)
- 10:40 – 11:00 AM: **Sean Davies**, Vanderbilt University, Nashville, TN, USA. *Regulation of macrophage function by NAPE-PLD*. (Abstract 34)
- 11:00 – 11:15 AM: **Azam Yazdani**, Harvard Medical School, Boston, MA, USA. *The AI-Based Network Integration for Multi-Omics Analysis: An Application to Immune and Inflammatory Resolution Pathways in Genetics, Glycomics, and Lipidomics*. (Abstract 35)
- 11:15 – 11:30 AM: **Shailendra Gupta**, University of Rostock, Rostock, MV, Germany. *SPIN: Specialized Pro-resolving lipid mediators INteractome, a knowledge graph to explore mechanism of SPM function*. (Abstract 36)
- 11:30 AM – 12:00 Noon: **Discussion on the session talks**

12:00 Noon – 2:00 PM
Lunch and Socialization

Friday, October 10, 2025 program continued on next page....

2:00 – 5:00 PM

Session 6: Lipid Mediator Receptors

(Co-Sponsored by Avanti Polar Lipids, HEEL, and Metagenics)

Chair: Nan Chiang, Harvard University, Boston, MA

- 2:00 – 2:30 PM: Plenary talk: **Takehiko Yokomizo**, Juntendo University, Tokyo, Tokyo, Japan. *Protective roles of BLT2 receptor on the plasma membrane disruption-induced epithelial cell damage.* (Abstract 37)
- 2:30 – 3:00 PM: Plenary talk: **Gabrielle Fredman**, Albany Medical College, Albany, NY, USA. *Aging, Atherosclerosis, and the Failure to Resolve: Targeting Resolution Pathways to Overcome Residual Inflammation* (Abstract 38)
- 3:00 – 3:20 PM: **Magnus Bäck**, Karolinska Institutet, Stockholm, Stockholm, Sweden. *Deletion of the resolvin D2 receptor GPR18 induces an age-dependent circadian hypertensive phenotype with vascular bed-specific endothelial dysfunction.* (Abstract 39)
- 3:20 – 3:40 PM: **Stephania Libreros**, Yale University, New Haven, CT, USA. *Eating invaders: Resolvins drive macrophage phagocytosis and resolution.* (Abstract 40)
- 3:40 – 4:00 PM: **David Potter**, University of Minnesota, Minneapolis, MN, USA. *Fluorinated cuban-1-yl biguanides inhibit biosynthesis of the endocrine resistance mediator (\pm)14,15-EET, reverse tumor hypoxia, and transiently overcome hormone therapy resistance in a breast cancer xenograft model.* (Abstract 41)
- 4:00 – 4:15 PM: **Brian Sansbury**, University of Louisville, Louisville, KY, USA. *ALX/FPR2 Orchestrates Erythroid Homeostasis and Recovery from Hematologic Stress.* (Abstract 42)
- 4:15 – 4:30 PM: **Yan Zhang**, Michigan Technological University, Houghton, MI, USA. *Resolvin D1 Attenuates Renal Inflammation and Cyst Growth in PKD Mice.* (Abstract 43)
- 4:30– 5:00 PM: **Discussion on the session talks**

5:00 – 6:00 PM Award Ceremony

Adjournment

Poster Presentations

Wednesday and Thursday, October 8-9, 2025

Display: 9:00 AM - 6:00 PM; Discussion: 5:00 – 6:00 PM

Outstanding Young Scientist Award contestants:

Posters 44 – 49 (postdoctoral fellows), 50 – 55 (graduate students)

Poster	Presenting Author	Title
44	Yanghui Chen	Germline Variants in Prostaglandin E Synthase 2 lead to Aortic Dissections via inflammation
45	Neha Rana	Pro-resolving lipid mediators prevent cancer cachexia
46	Thi Yen Ly Huynh	Lipid signaling modulates JunB and Ly-6A/E pathways to regulate macrophage function, leading to beta cell death and type 1 diabetes development
47	Gilbert Charles Morgan	EC5026, a soluble epoxide hydrolase inhibitor, enhances whisker stimulation-induced functional hyperemia and mitigates cognitive impairment in diabetes-associated ADRD
48	Urmila Jagtap	Lipidomics-based molecular dissection to identify the role of miR-21 in modulating high-fat diet-induced metabolic and hepatic dysfunctions in mice
49	Mamoru Ogawa	Microbiota-derived lipid signaling modulates epithelial wound healing in the ocular surface
50	Emma Elizabeth Sabu Kattuman	Therapeutic Repurposing of Anti-Asthmatic Agents for Melanoma: Modulation of Cysteinyl Leukotriene Receptor Signaling Pathways
51	Sri Ramya Donepudi	Investigating the role of epoxyeicosatrienoic acids in allergic asthma: Sex differences and the effect of sEH inhibition on lung function in females and males
52	Deborpita Sarkar	GPR44(CRTH2)-dependent regulation of immune checkpoint control in acute myeloid leukemia
53	Andrew Gregory	PTUPB, a dual sEH and COX-2 inhibitor, improves cerebral vascular and cognitive function in Alzheimer's Disease
54	Tenley Weil	Genetic polymorphisms in arachidonic acid 15-lipoxygenase correlate with airway epithelial cell responses to ozone
55	Danielle Diegisser	Targeting the 20-HETE Receptor, GPR75, to Protect Against Diet-Induced Obesity and Improve Metabolic Syndrome
56	Daowen Wang	Arachidonic acid metabolism and aortic dissection
57	Huiting Jia	A crosstalk between FADS2 and CYP4F11 in non-small cell lung cancer on the interface of fatty acid metabolism
59	Nada Birkic	Temporal changes in plasma 12,13-DiHOME concentrations following the induction of fecal peritonitis: a biomarker of sepsis-associated lung injury
60	Sugasini Dhavamani	Altered Erythrocyte Membrane Lipid Composition in Sickle Cell Disease: Implications for Mitochondrial Retention and Hemolysis
61	Larissa Engert	Sleep disturbances affect inflammatory resolution physiology in patients with Long COVID
62	Haley Guffey	Ffar4 suppresses only 5-lipoxygenase metabolites following inflammatory stimulus in microglia

Poster Presentations

Wednesday and Thursday, October 8-9, 2025

Display: 9:00 AM - 6:00 PM; Discussion: 5:00 – 6:00 PM

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Poster	Presenting Author	Title
63	Shailendra Gupta	Understanding plant-based drug mode of action in modulating bioactive lipid pathways associated with inflammation resolution using network pharmacology approach
64	Patricia Kane	Addressing epigenetic insult resulting in cellular debris with bioactive lipids, phospholipids and chaperones in neurological disease
65	Laura Leuenberger	Peripheral Proinflammatory Cytokines are Associated with Changes in Fatty Acids and Oxylipin Levels During Acute Respiratory Distress Syndrome
66	Hong Li	Eosinophils Regulate Th Cell Differentiation Through COX-2-Derived Prostaglandins During Allergic Lung Inflammation
67	Allyson Motter	MCTR3 mitigates cigarette smoke-induced epithelial damage and inflammation in differentiated primary human small airway epithelial cells at the air-liquid interface
68	Jun Nagai	Platelet CysLT2 receptor mediates a feed-forward loop with mast cells to amplify IL-33-driven type 2 inflammation
69	Oluwademilade Oladele	Dysregulation of Arachidonic Acid Metabolism Drives Inflammatory Lipid Production in Localized Provoked Vulvodynia
70	José David Rios	Specialized pro-resolving lipid mediators (SPMs) ameliorate hearing damage in a rat model of blast-induced ear injury.
71	Ignacia Salfate del Rio	Resolvin D2 limits senescent cell accumulation in atherosclerotic plaques.
72	Christopher Vadala	Wound healing and resolution of inflammation is impaired within ischemic pressure ulcers after spinal cord injury in a lesion-level dependent manner
73	Rafia Virk	Dietary Docosahexaenoic Acid Protects Against Obesity-Driven Lung Inflammation
74	Mariana Alonso-Riquelme	Dissecting the sex hormone-regulated production of specialized pro-resolving mediators (SPMs) in a human endometrial in vitro model.
75	Jane Border	Effects of chronic inhibition of soluble epoxide hydrolase on brain oxylipins in APP/PS1 TgF344 AD rats.
76	Emanuelle Chryzilla	Soluble epoxide hydrolase inhibition increases EET/DHET ratio and attenuates inflammation and pain in localized provoked vulvodynia
77	Samaneh Goorani	Novel compounds that target epoxyeicosanoids protect rat kidney epithelial cells in organ transplant solution during cold storage
78	John Seubert	Alterations in the cGAS-STING pathway and cellular senescence in aged female sEH null mice following myocardial infarction

Poster Presentations

Wednesday and Thursday, October 8-9, 2025

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Poster	Presenting Author	Title
79	Sophia Smith	Eicosanoid regulation of cancer cachexia via soluble epoxide hydrolase
80	Johnny Bui	Uncovering the Role of Cytochrome P450 2S1 in Endogenous Substrate and Skincare Drug Metabolism
81	Matthew Edin	Altered Cytochrome P450 Expression, Oxylipin Levels and Liver Regeneration in Cyp2c29-Deficient Mice with Phenytoin Treatment
82	Rosangela Hoshi	Impact of randomized omega-3 supplementation versus olive oil placebo on specialized pro-resolving mediators
83	Paul Kennedy	Characterization of human plasma as a reference material for lipid analysis using LC-MS
84	Rachana Madihalli Gangadhara	Quantification of novel gut-microbial lipids and their dysregulation associated with obesity and mild cognitive impairment
85	MD Abdul Malek	Detection and characterization of new lipids in grapes used in wine making by nontargeted LC/MS
86	Govindaiah Pilli	A Validated and Optimized method for the Quantification of Fatty acids Using Differential Mobility Separation and LC-MS
87	Haley Guffey	ApoE4 mediates a distinct polyunsaturated fatty acid response from stimulated microglia
88	Alan Brash	Covalent binding of lipoxygenase products in formation of the skin permeability barrier
89	Nao Inoue	Pnpla6 induces renal lysophosphatidylethanolamine reductions in a murine model of diabetic nephropathy
90	Dorina Krasniqi	Adipocyte-specific deletion of GPR75 protects against diet-induced obesity: Changes in glucose homeostasis and inflammatory responses
91	Paula Luis	Metabolism of hemiketals and 5-hydroxyprostaglandins
92	Kin Sing Lee	Oxidized polyunsaturated fat metabolites drive neurodegeneration mediated by a ferroptosis-like cell death mechanism.
93	Lois Oviawe	Oxylipin Remodeling in Cardiac Endothelial Cells Reveals Selective Lipid Pathway Activation During Ferroptosis
94	Krishna Rao Maddipati	Etiology of Chronic Inflammation: Perturbed Unalamation, NOT Inflammation
95	Xiaoxiao Wang	Dysregulation of Hepatic Epoxide Metabolism Following Ischemic Stroke: Involvement of the Glucocorticoid-sEH Axis
96	Daniel Irimia	Lipid mediators of neutrophil swarming against large microbes