Ash 2022 NHLBI Research Presentations

Friday, December 9

Scientific Workshop: Stem Cells
Niche-Derived Semaphorin 4A Prevents Functional Loss of Myeloid-Biased HSC during Inflammation and Aging
Lev Silberstein, M.D., Ph.D.
2:42–3:45 p.m. CT
Room not yet listed

Scientific Workshop: Stem Cells
Sleep Exerts Lasting Effects on Hematopoietic Stem Cell Function and Diversity
Cameron McAlpine, Ph.D.
2:42–3:45 p.m. CT
Room not yet listed

Scientific Workshop: Signaling and Developmental Hematopoiesis
Deconstructing Inflammatory Dynamics during Hematopoietic Stem Cell Development
Raquel Espin Palazon, Ph.D.
3:35–4:15 p.m. CT
Room not yet listed

Saturday, December 10

7: Impact of Arginine Therapy on Clinical Outcomes, Mitochondrial Function and Oxidative Stress in Children with Sickle Cell Disease Hospitalized with Vasoocclusive Pain Episodes: A Randomized Controlled Trial
Claudia Morris, M.D.
9:30 a.m. CT
Room 391-392

Scientific Program: Aplastic anemia, dysimmunity, and mutant clones
Immune deregulation in aplastic anemia
Neal Young, M.D.
9:30–10:45 a.m. CT
Room 288-290

Session: 401. Blood Transfusion: Molecular Mechanisms and Novel Therapies
32: Antibody-Mediated Antigen Loss Can Switch an Augmented Immune Response to Antibody-Mediated Immunosuppression
Ryan Jajosky, M.D.
9:45 a.m. CT
Room 393-396
Session: 636. Myelodysplastic Syndromes—Basic and Translational: Clonal Trajectories and Novel Therapies
86: Clonal Trajectories and Therapeutic Targeting of High-Risk SF3B1-Mutant Myelodysplastic Syndromes
Martina Sarchi, M.D.
9:45 a.m. CT
Room 260-262

Session: 401. Blood Transfusion: Molecular Mechanisms and Novel Therapies
33: Reticulocytes Are an Unappreciated Risk Factor for RBC Alloimmunization at the Donor and Recipient Levels
Krystalyn Hudson, Ph.D.
10 a.m. CT
Room 393-396

Session: 201. Granulocytes, Monocytes, and Macrophages II
16: Ongoing Production of Tissue-Resident Macrophages from Hematopoietic Stem Cells in Healthy Adult Macaques
Chuanfeng Wu, M.D., Ph.D.
10:15 a.m. CT
Room not yet listed

Session: 401. Blood Transfusion: Molecular Mechanisms and Novel Therapies
34: Predictors, Risk Factors and Outcomes of Patients with SAA with Anti-HLA Class I Antibodies Treated with Immunosuppressive Therapy
Jibran Durrani, M.D.
10:15 a.m. CT
Room 393-396

Session: 401. Blood Transfusion: Molecular Mechanisms and Novel Therapies
35: Blood Group A Enhances SARS-CoV-2 Infection
Shang-Chuen Wu, Ph.D.
10:30 a.m. CT
Room 393-396

138: Silent Cerebral Infarction during Immune TTP Remission – Prevalence, Predictors and Impact on Cognition
Shruti Chaturvedi, M.B.B.S.
12–1:30 p.m. CT
Great Hall A/D

135 Arginine Methylation on ADAMTS13 By Protein Arginine Methyltransferase 1 (PRMT1) Affects ADAMTS13 Secretion and Proteolytic Activity
Szumam Liu, Ph.D.
12:30 p.m. CT
Room 275-277

Education: Late Effects of Curative Therapy for Sickle Cell Disease
Knowledge to Date on Secondary Malignancy
Courtney Fitzhugh, M.D.
2-3:15 p.m. CT
Hall E

Session: 113. Hemoglobinopathies, Excluding Thalassemia: Basic and Translational: Cognitive Deficit, Pain, and Inflammation in Sickle Cell Disease: What We Learned from Mouse Models
175: Neuroinflammation Underlies the Development of Social Stress Induced Cognitive Deficit in Sickle Cell Disease
Oluwabukola Gbotosho, Ph.D.
2 – 3:30 p.m. CT
Room 275-277

Session: 508. Bone Marrow Failure: Acquired: Biology
193 JAK 1/2 Inhibition Preserves Hematopoietic Progenitor and Stem Cells, Prevents Aplasia, Inhibits Pro-Inflammatory Cytokines, and Prolongs Survival in Murine Immune Bone Marrow Failure
Emma M. Groarke, M.D.
2 p.m. CT
Room 260-262

Session: 113. Hemoglobinopathies, Excluding Thalassemia: Basic and Translational: Cognitive Deficit, Pain, and Inflammation in Sickle Cell Disease: What We Learned from Mouse Models
176: Microbial Metabolites Target Histone Deacetylases to Trigger Vascular Inflammation in Sickle Cell Disease
Lidiane Torres, Ph.D.
2:15 p.m. CT
Room 275-277

Session: 114. Hemoglobinopathies, Excluding Thalassemia: Clinical and Epidemiological: Hydroxyurea Treatment
182: Hydroxyurea with Dose-Escalation to Reduce Primary Stroke Risk in Children with Sickle Cell Anemia in Tanzania: Primary Results of the Sphere Trial
Emmanuela Ambrose, M.D.
2:15 p.m. CT
Room 278-282

Session: 113. Hemoglobinopathies, Excluding Thalassemia: Basic and Translational: Cognitive Deficit, Pain, and Inflammation in Sickle Cell Disease: What We Learned from Mouse Models
176: Microbial Metabolites Target Histone Deacetylases to Trigger Vascular Inflammation in Sickle Cell Disease
Huihui Li, Ph.D.
2:45 p.m. CT
Room 275-277
Session: 508. Bone Marrow Failure: Acquired: Biology
197: The Role of Heterozygous Variants in SAMD9/9L and Recessive Bone Marrow Failure-Related Genes in Adults with Severe Aplastic Anemia
Dalton Hironaka, B.A.
3:00 p.m. CT
Room 260-262

Session: 113. Hemoglobinopathies, Excluding Thalassemia: Basic and Translational: Cognitive Deficit, Pain, and Inflammation in Sickle Cell Disease: What We Learned from Mouse Models
180: Cold Exposure Induces Vaso-Occlusion and Hyperalgesia in Mice with Sickle Cell Disease That Is Dependent on Complement Activation
Zalaya Ivy, M.D., M.S.
3:15 p.m. CT
Room 275-277

Session: 114. Hemoglobinopathies, Excluding Thalassemia: Clinical and Epidemiological: Hydroxyurea Treatment
186: Loss of Cyb5R3 Function Silences Fetal Hemoglobin and Hematocrit Responses to Hydroxyurea in Patients with Sickle Cell Anemia
Katherine Wood, Ph.D.
3:15 p.m. CT
Room 278-282

Session: 101. Red Cells and Erythropoiesis, Excluding Iron I
285: The Molecular Pathophysiology of Ineffective Erythropoiesis at Single Cell Resolution
Raymond Doty, Ph.D.
4:30 p.m. CT
Room 391-392

Session: 602. Myeloid Oncogenesis: Basic: Chromatin Organization and Metabolism
297: Nuclear Phase Separation Directs HOX Expression in Acute Myeloid Leukemia
Gandhar Datar, B.S.
4:30 p.m. CT
Room 293-294

Session: 101. Red Cells and Erythropoiesis, Excluding Iron I
286: Anemia-Activated Cis Regulatory Requirements for Erythroid Regeneration
Yichao Zhou
4:45 p.m. CT
Room 391-392

Session: 631. Myeloproliferative Syndromes and Chronic Myeloid Leukemia: Basic and Translational: Identification of Novel
329 The High Mobility Group A1 Chromatin Regulator Drives Immune Evasion during MPN Progression By Repressing Genes Involved in Antigen Presentation
Joseph Kim
5 p.m. CT
Room 275-277
Sunday, December 11

Session: 631. Myeloproliferative Syndromes and Chronic Myeloid Leukemia: Basic and Translational: Molecular Consequences of MPN Driver and Co-mutations
451: Type 2 but Not Type 1 Calreticulin Mutants Exhibit Loss of Chaperone Function Due to C-Terminal Structural Interference, and Bind to Wild Type Calreticulin in a Dominant Negative Manner
Nicole Arellano, B.A.
9:30 a.m. CT
Room 275-277

Education: Sessions on malignant hematology acute myeloid leukemia: Improving outcomes in challenging subsets
Achieving MRD Negativity in AML: How Important Is This and How Do We Get There?
Dr. Chris Hourigan
9:30–10:45 a.m. CT
Great Hall B/C

391 AG-946 Normalizes Glycolysis and Improves Red Cell Indices in a Humanized Sickle Cell Mouse Model
Rohitash Jamwal, Ph.D.
9:30 a.m. CT
Room not listed yet

Session: 509. Bone Marrow Failure and Cancer Predisposition Syndromes: Congenital: From Biology to Therapeutics
409: Regulated Expression of GATA1 As a Gene Therapy Cure for Diamond-Blackfan Anemia
Richard Voit, M.D., Ph.D.
9:30 a.m. CT
Room 260-262

475 Donor-Derived Amphiregulin Drives CD4+ T Cell Expansion and Promotes Tissue Pathology after Experimental Allogeneic BMT
Takahiro Ito, M.D.
9:30 a.m. CT
Room not listed yet

Session: 321. Coagulation and Fibrinolysis: Basic and Translational I
398: Inhibiting Activated Protein C Cleavage of Factor VIII for Hemophilia a Gene Therapy
Anna Sternberg, Ph.D.
9:45 a.m. CT
Room 293-294
Session: 631. Myeloproliferative Syndromes and Chronic Myeloid Leukemia: Basic and Translational: Molecular Consequences of MPN Driver and Co-mutations

452: Mutant Srsf2 Diminishes Jak2V617F-Induced Erythrocytosis in Mice and Is Associated with Lower Hemoglobin in Patients with Chronic Phase JAK2-Mutant MPN
Anna Marneth, Ph.D.
9:45 a.m. CT
Room 275-277


393 Pklr Variants Associated with Acute Pain in Sickle Cell Disease Influence ATP Concentrations in Red Blood Cells
Xunde Wang, Ph.D.
10 a.m. CT
Room 343-345

Session: 321. Coagulation and Fibrinolysis: Basic and Translational I

399: Antigen Trafficking and Possibly Intrinsic Immunostimulatory Properties Shape High Immunogenicity of Factor VIII
Radoslaw Kaczmarek, Ph.D.
10 a.m. CT
Room 293-294

Session: 503. Clonal Hematopoiesis, Aging and Inflammation: Insights from Animal Models

405: The Impact of Dnmt3a or Tet2 CH on Alzheimer’s Disease in a Murine Model
Trisha Wathan
10 a.m. CT
Room 279-273


394: Preclinical Development and Screening of a Quinone-Nitroalkene Molecule for Sickle Cell Anemia
Fabliha Chowdhury, M.Sc.
10:15 a.m. CT
Room 343-345

Session: 904. Outcomes Research—Non-Malignant Conditions: Classical Hematology: From Horses to Zebras

508 Fatigue and Cognition During Remission in Adults with Immune Thrombotic Thrombocytopenic Purpura
Deirdra Terrell, Ph.D.
10:15 a.m. CT
Room not yet listed

Session: 321. Coagulation and Fibrinolysis: Basic and Translational I

401: Coagulation Factor XII Is Activated Via Noncanonical Binding to Platelet Integrin αIIbβ3
Pavan Bendapudi, M.D.
10:30 a.m. CT
Session: 631. Myeloproliferative Syndromes and Chronic Myeloid Leukemia: Basic and Translational: Molecular Consequences of MPN Driver and Co-mutations
455: Transcriptional and Metabolic Profiling Reveals Alpha-Ketoglutarate As a Novel Mediator of Aberrant Platelet Activity and Inflammation in Myeloproliferative Neoplasms
Fan He, Ph.D.
10:30 a.m. CT
Room 275-277

479 The DNA-Sensor AIM2 Promotes BCR-Activated B Cells in Chronic Graft-Versus-Host-Disease
Jonathan Visentin, Pharm.D., Ph.D.
10:30 a.m. CT
Room not yet listed

396: Prolonged Combinatorial Pharmacological Therapy Targeting the Epigenome Increases Fetal Hemoglobin to Clinically Relevant Levels in Normal, Nonanemic Baboons
Donald Lavelle, Ph.D.
10:45 a.m. CT
Room 343-345

Session: 509. Bone Marrow Failure and Cancer Predisposition Syndromes: Congenital: From Biology to Therapeutics
414 Pathogenic RUNX1 C-Terminal Truncation Mutations Contribute to Differentiation Block and Result in Unique Changes in Transcription and Chromatin Organization
Nathan Jayne, B.Sc.
10:45 a.m. CT
Room 260-262

Session: 627. Aggressive Lymphomas: Clinical and Epidemiological: Rare Populations
450: T-Cell Prolymphocytic Leukemia: Trends in Overall Survival Demonstrate Marginal Improvement over Time and Minimal Benefit with Currently Available Treatments
Victoria Vardell, M.D.
10:45 a.m. CT
La Nouvelle Orleans Ballroom C

518: Factor XI Inhibition for the Prevention of Catheter-Associated Thrombosis in Cancer Patients Undergoing Central Line Placement: A Phase 2 Clinical Trial
Michael Pfeffer, M.B.B.S.
12:15 p.m. CT
Room 291-292
Session: 602. Myeloid Oncogenesis: Basic: Epigenetics and Transcriptional Regulation
532: Functional Characterization of Cooperating MGA Deletions in RUNX1::RUNX1T1 Acute Myeloid Leukemia
Melvin Thomas, Ph.D.
12:45 p.m. CT
Room 275-277

Session: 637. Myelodysplastic Syndromes – Clinical and Epidemiological IV
562: Myelodysplastic Syndrome/Myeloproliferative Neoplasm Overlap Syndromes: A National Analysis of Overall Survival and Demographic Features
Victoria Vardell, M.D.
12:45 p.m. CT
Room 265-268

Session: 506. Bone Marrow Microenvironment: Contribution of Immune Signaling to the Microenvironment
528: Jagged1+ Myeloid-Derived Suppressor Cells Are Required for Recovery of the Hematopoietic Bone Marrow Niche after Myelosuppression
Kostandin Pajcini, Ph.D.
1:45 p.m. CT
Room 260-262

Session: Plenary Scientific Session
5 C1 Inhibitor Deficiency Results in Increased Activation of Coagulation and Enhanced Venous Thrombosis
Steven P Grover, Ph.D.
2-4 p.m. CT
Hall E

Session: 201. Granulocytes, Monocytes, and Macrophages I
583: A Noncoding Germline Variant Creates a Gain-of-Function De Novo Enhancer That up-Regulates IL5 Transcription to Cause Familial Hypereosinophilia, Revealing a Previously Undescribed Mechanism for Human Disease
Jung-Hyun Kim, Ph.D.
4:30 p.m. CT
Room 391-392

Session: 322. Disorders of Coagulation or Fibrinolysis: Clinical and Epidemiological: Von Willebrand Disease and Other
590: Multicenter, Randomized Crossover Trial Comparing Recombinant Von Willebrand Factor and Tranexamic Acid for Heavy Menstrual Bleeding in Von Willebrand Disease
Margaret Ragni, M.D., M.P.H.
4:45 p.m. CT
Room 288-290

Session: 613. Acute Myeloid Leukemias: Clinical and Epidemiological: Genomic Determinants of Prognosis in Patients with Acute Myeloid Leukemia
597 Prognostic Impact of Secondary Versus De Novo Ontogeny in Acute Myeloid Leukemia (AML) Is Predominantly Accounted for By the European Leukemianet (ELN) 2022 Risk Classification
Michael J. Hochman, M.D.
5 p.m. CT
Room not yet listed

Session: 201. Granulocytes, Monocytes, and Macrophages I
586: Aggregation of Enveloped Viruses By Platelet Factor 4 (PF4) and Neutrophil Extracellular Traps (NETs): Implications for the Anti-Viral Properties of NETs
Kandace Gollomp, M.D.
5:15 p.m. CT
Room 391-392

Session: 632. Chronic Myeloid Leukemia: Clinical and Epidemiological: Longer Term Response, TFR, Pregnancy, and Disparities
624: Racial and Ethnic Disparities in Survival Outcomes in Chronic Myeloid Leukemia
Catherine Sobieski, M.D.
5:45 p.m. CT
Room 388-390

Monday, December 12

E. Donnal Thomas Lecture and Prize
The Long and Winding Road to Clinically Effective Graft-versus-Host Disease (GVHD) Therapeutics
Bruce R. Blazar, M.D.
9–10 a.m. CT
Hall E

Session: 301. Vasculature, Endothelium, Thrombosis and Platelets: Basic and Translational: Thrombosis and the Endothelium
685: TMEM16E Regulates Endothelial Cell Procoagulant Activity and Thrombosis
Alec Schmaier, M.D., Ph.D.
10:30 a.m. CT
Room 293-294

Scientific Program: Childhood Red Cell Disorders: Embracing Technology to Improve How We Manage Challenging Anemias
New Technologies for Assessment of Anemia and Other Hematologic Disorders in Resource Limited Settings
Wilbur Lam, M.D., Ph.D.
10:30–11:45 a.m. CT
Room 343-345

Session: 321. Coagulation and Fibrinolysis: Basic and Translational II
692: X-Ray Structure of Thrombin Bound to a Heterobifunctional Aptamer-Drug Conjugate Reveals the Mechanistic Basis for a Novel Tethered Inhibition Strategy
Shekar Kumar, Ph.D.
10:45 a.m. CT
Room 291-292

Session: 203. Lymphocytes and Acquired or Congenital Immunodeficiency Disorders: Delineating Immunity from Mice to Humans
681: Pediatric Evans Syndrome Displays Broad Immune Dysregulation Characterized By Extra-Follicular B-Cell Responses and Unique Autoantibody Repertoire
Deepak Kumar, Ph.D.
11 a.m. CT
Room 278-282

Session: 301. Vasculature, Endothelium, Thrombosis and Platelets: Basic and Translational: Thrombosis and the Endothelium
688: Elevated Levels of Low Density Lipoprotein (LDL) Trigger VWF Self-Association into Fibers and Bundles and Potentiate Microvascular Thrombosis
Junmei Chen, Ph.D.
11:15 a.m. CT
Room 293-294

Session: 321. Coagulation and Fibrinolysis: Basic and Translational II
694: Identification of Critical Proteins Required for Efficient Von Willebrand Factor Secretion Using CRISPR Knockout Screening
Lauren Shevell, M.D.
11:15 a.m. CT
Room 291-292

Session: 321. Coagulation and Fibrinolysis: Basic and Translational II
695: Sex-Specific Differences in the Pathogenesis, Endothelial Dysfunction, and Hypercoagulability of Sars-Cov-2 Infection in K18-hACE2 Mice
Roberto Aiolfi, Ph.D.
11:30 a.m. CT
Room 291-292

Session: 301. Vasculature, Endothelium, Thrombosis and Platelets: Basic and Translational: Thrombosis and the Endothelium
690: Targeting Activated Neutrophils in Antiphospholipid Antibody-Mediated Thrombosis
Lin Di
11:45 a.m. CT
Room 293-294

Session: 616. Acute Myeloid Leukemias: Investigational Therapies, Excluding Transplantation and Cellular Immunotherapies: Frontline and Maintenance
714 Randomized Phase II Study to Assess the Role of Nivolumab As Single Agent to Eliminate Minimal Residual Disease and Maintain Remission in Acute Myelogenous Leukemia (AML) Patients after Chemotherapy (NCI9706 protocol; REMAIN Trial)
Hongtao Liu, M.D., Ph.D.
11:45 a.m. CT
Room not yet listed
Session: 114. Hemoglobinopathies, Excluding Thalassemia: Clinical and Epidemiological: Women's and Clinical Issues
805: Hormonal Contraceptive Use and Association with Thromboembolism in Women with Sickle Cell Disease
Natasha Bala, M.D.
2:45 p.m. CT
Room 278-282

Session: 114. Hemoglobinopathies, Excluding Thalassemia: Clinical and Epidemiological: Women's and Clinical Issues
806: Sickle Cell Disease-Specific Blood Pressure Thresholds for Hypertensive Disorders of Pregnancy: A Multinational Study
Macy Early
3 p.m. CT
Room 278-282

Session: 301. Vasculature, Endothelium, Thrombosis and Platelets: Basic and Translational: Mechanistic Insights That Suggest Novel Diagnostic or Therapeutic Strategies
812: Role of Glycogen Mobilization and Mitochondrial Bioenergetics in Platelet Function, Hemostasis, and Thrombosis
Shravani Prakhya, M.S.
3 p.m. CT
Room 353-355

Session: 301. Vasculature, Endothelium, Thrombosis and Platelets: Basic and Translational: Mechanistic Insights That Suggest Novel Diagnostic or Therapeutic Strategies
811: “Autoimmune HIT”, a Potential Diagnostic Artifact Due to Remnant Heparin in HIT Samples, Is Not Associated with More Severe Outcomes
Adam Kanack
3:15 p.m. CT
Room 353-355

Session: 301. Vasculature, Endothelium, Thrombosis and Platelets: Basic and Translational: Mechanistic Insights That Suggest Novel Diagnostic or Therapeutic Strategies
813: Platelet ERO1α Is Crucial for Ca2+ Mobilization and Platelet Activation in Atherothrombosis
Vishwanath Jha, Ph.D.
3:15 p.m. CT
Room 353-355

Session: 637. Myelodysplastic Syndromes – Clinical and Epidemiological I
855: Phase 1 Results of the First-in-Class CXCRI/2 Inhibitor SX-682 in Patients with Hypomethylating Agent Failure Myelodysplastic Syndromes
David Sallman, M.D.
3:15 p.m. CT
Room 243-245

Session: 501. Hematopoietic Stem and Progenitor Cells and Hematopoiesis: Basic and Translational: Basic and Developmental
819 Hematopoietic Flt3+ Multipotent Progenitors Are Organized in Discrete Functionally and Hierarchically Distinct Populations
Damien Reynaud
3:15 p.m. CT
Room 252-254

Session: 501. Hematopoietic Stem and Progenitor Cells and Hematopoiesis: Basic and Translational: Basic and Developmental
820: Cap-Independent Protein Translation in Hematopoiesis
Michael Mazzola, B.S.
3:30 p.m. CT
Room 252-254

Session: 501. Hematopoietic Stem and Progenitor Cells and Hematopoiesis: Basic and Translational: Basic and Developmental
822: Novel Evidence That Intracellular Complement Network (complosome) Is Expressed in Hematopoietic Stem Cells (HSPCs) and Regulates Their Trafficking, Metabolism, and Proliferation in an Intracrine-Dependent Manner By Engaging Pattern Recognition Receptor Nlrip3 Inflammasome
Vira Chumak, Ph.D.
4 p.m. CT
Room 252-254

931: IRAK1 Contributes to IRAK4 Inhibitor Resistance Via Non-Canonical Signaling Mechanisms in MDS/AML
Josh Bennett, B.Sc.
4:30 p.m. CT
Room 353-355

Special Session: AI and Machine Learning: A New Frontier in Hematology
AI in the Clinic: The Current Translation of Machine Learning Algorithms into Clinical Decision Tools
Ilana Goldberg, Ph.D.
4:30–6 p.m. CT

Scientific Session: Session: Metabolic Regulation and Implications for Red Cells
Regulation of Metabolism in Hematopoietic Differentiation
Leonard I. Zon, M.D.
4:30–5:45 p.m. CT
Room not yet listed

Special symposium on the basic science of hemostasis and thrombosis
Role of Factor XII in Sepsis
Evi X. Stavrou, M.D.
4:30–6:05 p.m. CT
Room 208-210
Session: 501. Hematopoietic Stem and Progenitor Cells and Hematopoiesis: Basic and Translational: Disease and Aging
923: Lasting Hematopoietic Memory Induced By Gestational Diabetes Contributes to Atherosclerosis Development in Adult Offspring
Damien Reynaud
5:30 p.m. CT
Room 393-396

Tuesday, December 13

Session: Late-Breaking Abstracts Session
LBA-4: Post-Transplant Cyclophosphamide, Tacrolimus, and Mycophenolate Mofetil As the New Standard for Graft-Versus-Host Disease (GVHD) Prophylaxis in Reduced Intensity Conditioning: Results from Phase III BMT CTN 1703
Shernan Holton, M.D. and Javier Bolanos-Meade, M.D.
9–10:30 a.m. CT
Hall E