



70th Annual
Red Cell Club Meeting

SCIENTIFIC MEETING

70TH ANNUAL

Red Cell Club Meeting

October 9–10, 2026

EVENT PROGRAM

In memory of Philip Low

OCTOBER 9–10, 2026



RED CELL CLUB

Friday October 9

SCIENTIFIC PROGRAM / DAY ONE

Session One • Morning

Jian Xu and Scott Peslak St. Jude Children's Research Hospital • University of Pennsylvania

07:00 a.m. - 08:00 a.m. Registration and Breakfast

08:00 a.m. - 08:05 a.m. Welcome and Opening Remarks

Mitch Weiss, Patrick Gallagher | St. Jude Children's Research Hospital, Nationwide Children's Hospital, Ohio State

08:05 a.m. - 08:25 a.m. Fatty Acid Metabolism in Normal and Pathological Erythropoiesis

Tam Tran | St. Jude Children's Research Hospital

08:25 a.m. - 08:45 a.m. Codanin-1 Deficiency Accelerates Erythroblast Cycling While Leading to Ineffective Erythropoiesis

Corbin R. Azucenas | Cincinnati Children's Hospital Medical Center

08:45 a.m. - 09:05 a.m. Vesicle Trafficking Defects due to Dominant Negative VPS4A Mutations lead to Increased Autophagic Activity in Terminal Erythropoiesis

Katie Seu | Cincinnati Children's Hospital Medical Center

09:05 a.m. - 09:25 a.m. Intronic PKLR Mutations Lead to Aberrant Splicing and Nonsense Mediated Decay in Pyruvate Kinase-Deficiency

Kiran Lalwani | Nationwide Children's Hospital, Ohio State

09:25 a.m. - 09:45 a.m. miR-144/451 Coordinates Iron Acquisition, Metabolic Signaling, and Proteostasis in β -Thalassemia

George Christakopoulos | St. Jude Children's Research Hospital

09:45 a.m. - 10:10 a.m. Tools and Resources for Studying Cell-intrinsic and -Extrinsic Regulation of Erythropoiesis

Xiuli An | NY Blood Center

10:10 a.m. - 10:30 a.m. Break

10:30 a.m. - 11:10 a.m. Keynote: Beyond Hemoglobin: Perinatal Gene Switching as a General Principle of Physiological Adaptation and Therapeutic Opportunity

Madan Babu | St. Jude Children's Research Hospital

11:10 a.m. - 11:30 a.m. PPP6C Loss Induces Fetal Hemoglobin via let-7-HIC2-BCL11A

Narasaiah Kovuru | University of Pennsylvania

11:30 a.m. - 11:50 a.m. Exploring PTPA Mediated Phosphoregulatory Mechanisms of Fetal Hemoglobin Switching with Acute PTPA Degradation

Anisha Jackson | University of Pennsylvania

11:50 a.m. - 12:10 p.m. Poised to Promote Transcription: NFY Binding at the γ -Globin Promoter

Josiah Teague | St. Jude Children's Research Hospital

12:10 p.m. - 12:30 p.m. Genome-wide screening identifies SAGA complex as novel fetal hemoglobin repressor by regulating BCL11A expression

Shicong Zhu | University of Pennsylvania

12:30 p.m. - 1:30 p.m. Adjourn for Lunch

Session Two • Afternoon

Iqbal Hazma and Nishi Arun Harwani University of Maryland • St. Jude Children's Research Hospital

1:30 p.m. - 1:50 p.m. Tribute to Philip Low

Mohandas Narla, Jun J. Yang | NY Blood Center, St. Jude Children's Research Hospital

1:50 p.m. - 2:30 p.m. Keynote: Introduction to Gene Editing and Creation of Mouse Models in Hemoglobinopathies

Shondra Miller | St. Jude Children's Research Hospital

2:30 p.m. - 2:50 p.m. SAGES1: a St. Jude Developed Gene Editing Therapy for Sickle Cell Disease, from Bench to Clinic

Jonathan Yen | St. Jude Children's Research Hospital

2:50 p.m. - 3:10 p.m. Translating Adenine Base Editor RNPs to the Clinic for Sickle Cell Disease: Preclinical Development of SAGES2

Nikitha Nimmagadda | St. Jude Children's Research Hospital

3:10 p.m. - 3:30 p.m. Mechanistic and Therapeutic Insights into Inherited Anemias due to GATA1 and KLF1 Mutations

Nishi Arun Harwani | St. Jude Children's Research Hospital

3:30 p.m. - 4:00 p.m. Break

4:00 p.m. - 4:30 p.m. Reduce, Reuse, Recycle: Closing the Heme Loop

Iqbal Hazma | University of Maryland

4:30 p.m. - 4:50 p.m. Iron Restriction Alleviates beta-thalassemia Through HRI Stress Response Pathways

Alfonso Fernandez | St. Jude Children's Research Hospital

4:50 p.m. - 5:10 p.m. Mitochondrial Unfoldase CLPX is Essential for Terminal Heme Synthesis During Erythroid Differentiation

Muhammad Ishfaq | University of Pittsburgh

5:10 p.m. - 5:30 p.m. Integrator Regulates Transcriptional Remodeling during Terminal Erythroid Maturation

Deanna Abid | University of Rochester

5:30 p.m. - 5:50 p.m. HEXIM1 Promotes Cell-Type-Specific Gene Expression Programs Through Interaction with the Super Elongation Complex

Stork Abruda | University of Rochester

5:50 p.m. - 6:10 p.m. Linking Transcriptional Regulation to Metabolism: The Roles of GATA1 and GATA1s in Erythropoiesis

Te Ling | St. Jude Children's Research Hospital

6:10 p.m. - 6:35 p.m. Vitamin C promotes differentiation of stress-specific erythroid progenitors in stress erythropoiesis

Lily Huang | UT Southwestern

6:35 p.m. - 7:15 p.m. Poster Session

7:15 p.m. Dinner for Registered Attendees

Saturday October 10

SCIENTIFIC PROGRAM / DAY TWO

Session Three • Morning

Laure Steiner and Allan Doctor University of Rochester •
University of Maryland

07:00 a.m. - 08:00 a.m. Registration and Breakfast

08:00 a.m. - 08:05 a.m. Welcome, Announcements

Mitch Weiss, Patrick Gallagher | St. Jude Children's Research Hospital,
Nationwide Children's Hospital, Ohio State

**08:05 a.m. - 08:25 a.m. An Oxygen-Sensing
Band3-CD47-NMIIA-PIEZO1-eNOS Signaling
Pathway Coordinates Red Blood Cell Mechanical
Adaptation and Is Impaired in Sickle Cell Disease**

Zohreh Safari | University of Maryland

**08:25 a.m. - 08:45 a.m. CBD Takes the Pressure
Off: Targeting PIEZO Channels in Red Cell Disease**

Pengfei Liang | Ohio State University

**08:45 a.m. - 09:10 a.m. Targeting Abnormal
Phosphatidylserine Exposure in Red Blood Cell
Disorders**

Huanghe Yang | Duke University

**09:10 a.m. - 09:30 a.m. Quantitative Determination
of Erythrocyte 2,3-Diphosphoglycerate by Weak
Anion-Exchange HPLC: Analytical and Physiological
Validation**

Fantao Meng | University of Maryland

**09:30 a.m. - 09:50 a.m. Beyond Hemoglobin
Affinity: Red Blood Cells Exhibit Distinct Oxygen
Transport Phenotypes**

Stephen Rogers | University of Maryland

**09:50 a.m. - 10:10 a.m. Mutation-Resolved Spatial
Transcriptomics Reveals Erythroid Niche
Remodeling Across Myeloid Neoplasms**

Wenjie Cai | Northwestern University

10:10 a.m. - 10:30 a.m. Break

Session Three • Continued

University of Rochester • University of Maryland

**10:30 a.m. - 10:50 a.m. Combined
Haploinsufficiency of p53 and Runx1 Rescues
Erythropoiesis, Preserves HSC Function, and
Suppresses Leukemia in an Rps19-Deficient Model
of Diamond Blackfan Anemia Syndrome**

Yuefeng Tang | Feinstein Institutes for Medical Research

**10:50 a.m. - 11:10 a.m. 5S RNP-MDM2 Interaction
Mediates Altered TP53 and PRC2 Activities in
RPS19-Mutated DBA**

Nana Liu | St. Jude Children's Research Hospital

**11:10 a.m. - 11:30 a.m. Rps19 and Rpl5
Haploinsufficiency Drive Distinct Metabolic
Reprogramming in Diamond-Blackfan Anemia
Syndrome**

Jonathan de Wilde | Feinstein Institutes for Medical Research

**11:30 a.m. - 11:50 a.m. Stress-Granule Dissolution
is a Therapeutic Fulcrum for Stress Erythropoiesis
and Diamond-Blackfan Anemia Ribosomopathies**

Rajesh Gunage | Boston Children's Hospital

**11:50 a.m. - 12:10 p.m. A Preclinical Platform for
Development of Personalized Genome Editing for
Diamond Blackfan Anemia Syndrome**

Priyanka Singh | St. Jude Children's Research Hospital

12:10 p.m. Closing Remarks and Boxed Lunch

John Crispino, Patrick Gallagher | St. Jude Children's Research Hospital,
Nationwide Children's Hospital, Ohio State

1:15 p.m. St. Jude Tour (optional)

In Memory of Philip Low

1947-2026



Philip Low

Ralph C. Corley Distinguished Professor of Chemistry
Presidential Scholar for Drug Discovery
Purdue University

Phil Low, the Ralph C. Corley Distinguished Professor of Chemistry and Presidential Scholar for Drug Discovery at Purdue University, who contributed fundamental new knowledge and ground-breaking drug discoveries, died in March at the age of 78. Phil is survived by his wife, Joan, five children, and 19 grandchildren. He was a longtime member of the Red Blood Cell community and an enthusiastic participant, with his trainees, in the annual Red Cell Club Meetings.

Phil was a graduate of West Lafayette High School, studied chemistry at Brigham Young University, and earned a PhD in Biochemistry at the University of California, San Diego. He joined the Purdue University faculty in 1976 where his father, Philip F. Low, was a distinguished professor of agronomy.

The first half of his career was in the red cell field, performing groundbreaking work on the structure, function, and regulation of erythrocyte membrane band 3 (anion exchanger 1, AE1, SLC4A1). This includes elucidation of how the N-terminal cytoplasmic domain of band 3 acts as the central integration site for peripheral membrane-protein interactions, coupling the lipid bilayer to the underlying spectrin-actin cytoskeleton. He demonstrated that glycolysis is regulated via reversible enzyme binding (such as aldolase and GAPDH) to the N-terminus of band 3, acting as a metabolic switch. Extending this work, he identified the reversible association of deoxyhemoglobin with band 3 as an oxygen-triggered molecular switch that helps modulate red blood cell properties and metabolic flux in response to oxygen levels. This was absolutely groundbreaking work. Phil's lab solved the crystallographic structure of the cytoplasmic domain of band 3, allowing an understanding of band 3's macromolecular interactions. Phil investigated how band 3 tyrosine phosphorylation (mediated by endogenous kinases like Syk) affects membrane stability, red cell aging, and vaso-occlusive events in sickle cell disease and malaria. Phil used this knowledge to develop strategies to inhibit these kinases as a treatment for malaria. Later in his career, Phil became interested in folate receptors and their use for drug delivery. He is listed on more than 145 inventions and 600 patents. Purdue announced the creation of the Low Institute for Therapeutics, a nonprofit organization designed to address the gap between academic discovery and early-stage clinical development, through a founding gift from Phil and Joan Low of \$20 million. Announcing the gift, Phil said "I saw this as the ideal moment to spotlight the critical importance of therapeutics research and the ongoing need for funding. As researchers, we carry a deep responsibility to pursue work that truly improves lives."

We will miss him.