CURRICULUM VITAE

Stephen Sykes

Profilo Professionale

Professore Associato con Tenure di Pediatria, Ematologia e Oncologia
Washington University in St. Louis
School of Medicine
Dipartimento di Pediatria
Divisione di Emato-Oncologia

Percorso Formativo Universitario

1995 - 1997 Diploma Biennale (AA) in Scienze Generali, Ulster County Community College, Stone Ridge, New York, USA

1997 - 2000 Laurea Triennale (BS) in Biochimica, Mount Allison University, Sackville, New Brunswick, Canada

2002 - 2007 Dottorato (PhD) in Biologia Cellulare e Molecolare, University of Pennsylvania, Philadelphia, PA
Tesi di dottorato "Regulation of the Tumor Suppressor Protein p53 by MYST Family Acetyltransferases" Mentor: Dr. Steven B. McMahon

2008 - 2009 Borsa di Studio Post-Dottorato, Harvard Medical School - Brigham and Women's Hospital, Boston, MA, Mentor: Dr. D. Gary Gilliland

2009 - 2012 Borsa di Studio Post-Dottorato, Harvard Medical School - Massachusetts General Hospital, Boston, MA, Mentor: Dr. David T. Scadden

Posizioni Accademiche / Impieghi

2012 – 2020 Professore a Tempo Determinato, Fox Chase Cancer Center, Philadelphia, PA

2020 – 2021 Professore Associato, Fox Chase Cancer Center, Philadelphia, PA
2021 - Pres Professore Associato of Pediatrics, Hematology and Oncology, Washington University in St. Louis, St. Louis, MO

Responsabilità Didattiche

2000
Assistente di Laboratorio, Corso di Introduzione alla Biochimica #BIOC 1001, Mount Allison University, Sackville, NB, Canada
Descrizione: Preparazione delle apparecchiature scientifiche per esperimenti di Biochimica, assistenza agli studenti nell'allestimento e nell'esecuzione degli esperimenti.

2003 – 2004
Assistente alla Didattica, Corso di Regolazione del Genoma #BIOM 555, University of Pennsylvania, Philadelphia, PA, USA
Descrizione: Conduzione di journal club, sessioni di tutoraggio e assistenza agli studenti nei compiti assegnati in classe (es. rispondere a domande, revisione di elaborati).

2017 – 2022
Docente, Molecular, Cellular and Systems Signal Transduction – Lezione sulla Biologia Redox Intracellulare, Corso di Biologia Molecolare #BMSC 8206, Temple University School of Medicine, Philadelphia, PA, USA
Descrizione: Lezioni sulla biologia dei radicali liberi e reazioni di ossidoriduzione nelle cellule dei mammiferi, sulle tecniche all'avanguardia per la misurazione di radicali liberi e su come le alterazioni dell'omeostasi redox contribuiscano a malattie e sindromi umane.

2023 – Presente
Docente, Special Emphasis Pathway in Cancer Biology: One-Carbon Metabolism Corso #L41-5196, Washington University in St. Louis School of Medicine
Descrizione: Fornitura di conoscenze aggiornate sul ruolo del metabolismo a un carbonio nello sviluppo e nella progressione delle neoplasie ematologiche e dei tumori solidi.

2023 – Presente
Docente, Programma Estivo di Immersione per dottorandi
Descrizione: Il corso ha lo scopo di insegnare e guidare i candidati PhD come preparare proposte di finanziamento per ricerche scientifiche.

Nomine in Comitati Universitari di Medicina e Ospedali

2014 - 2021 Professore Aggiunto - Temple University School of Medicine
2019 – 2021 Membro del Comitato per la Cura e l'Uso degli Animali (Institutional Animal Care and Use Committee -IACUC), Fox Chase Cancer Center
2024 - Pres Professore Associato with Tenure, Washington University in St. Louis School of Medicine
2021 - Pres Vicepresidente e Membro del Comitato per la Cura e l'Uso degli Animali, Washington University School of Medicine IACUC

Onorificenze e Premi

1997 - 1998 Mount Allison University Entrance Scholarship

2000 Academic All-Canadian – Basketball, Mount Allison University
2006 Monica Shander Award for Outstanding Pre-Doctoral Research, Wistar Institute
2011 - 2012 International Society of Experimental Hematology (ISEH) Eugene Goldwasser Fellowship
2014 – 2016 American Society of Hematology (ASH) Junior Scholar Award
2019 - 2023 American Cancer Society Research Scholar Award

Responsabilità Editoriali

Revisore Ad Hoc per le seguenti riviste scientifiche:
2013 - Pres Molecular Cancer Research
2014 - Pres Stem Cell Reports
2014 - Pres Blood Journal
2017 - Pres Cancer Research
2018 - Pres Leukemia Journal
2018 - Pres Clinical Cancer Research
2018 - Pres Journal of Experimental Medicine
2018 - Pres Haematologica
2019 - Pres Journal of Clinical Investigation Insights
2019 - Pres Proceedings in the National Academy of Sciences
2021 - Pres Science
2022 - Pres Cancer Discovery
2022 - Pres Nature Metabolism
2022 - Pres Scientific Advances
2024 - Pres Nature Cell Biology
2024 - Pres Hemisphere
2024 - Pres Scientific Reports

Società e Organizzazioni Professionali

2009 – Pres American Society of Hematology, Member
2010 – Pres International Society of Experimental Hematology (ISEH), Member
2014 – 2018 Member of the New Investigator Committee, ISEH
2017 - Pres European Hematology Association, Member

Principali Conferenze e Convegni

2011 Unexpected Role for FOXOs in Leukemia Stem Cells. Gordon Research Conference – Oxidative Stress and Disease, Ventura, CA, USA
2012 The Role of FOXOs in Acute Myeloid Leukemia, Fox Chase Cancer Center - Inflammation and Immunology Symposium, Philadelphia, PA, USA
2014 The role of FOXOs in Acute Myeloid Leukemia, University of Ulm - Graduate School Spring meeting, Ulm, Germany
2017 Mitochondrial Redox Biology: A Therapeutic Vulnerability in Leukemia, HI-STEM Mini-symposium, Heidelberg, Germany

2018 Targeting the Unfolded Protein Response in Acute Myeloid Leukemia, CHOP Research Institute Normal & Malignant Hematopoiesis Research Affinity Group & Abramson Family Cancer Center of the University of Pennsylvania, Hematologic Malignancies Program, Philadelphia, Pennsylvania, USA

2020 Regulation of Serine Synthesis & Catabolism in Acute Myeloid Leukemia, Center for Discovery and Innovation. Member of Hackensack Meridian Health, Nutley, NJ, USA

2020 Regulation of Serine Synthesis & Catabolism in Acute Myeloid Leukemia, Department of Medicine, Oncology Division. Washington University – Grand Rounds, Saint Louis, MO, USA

2020 Regulation of Serine Synthesis & Catabolism in Acute Myeloid Leukemia, Ohio State University Comprehensive Cancer Center – Leukemia Research Program Seminar, Columbus, OH, USA

2022 The Role & Regulation of Serine and Nucleotide Metabolism in Acute Myeloid Leukemia, CHOP's Normal and Malignant Hematopoiesis RAG Seminar Speaker, Philadelphia, PA, USA

2022 ATF4 coordinates amino acid and protein synthesis to support the differentiation blockade in acute myeloid leukemia, Virtual, Los Angeles, CA

Supporto alla Ricerca

Finanziamenti Governativi Completati

2012 - 2015 R00 CA158461, NIH/NCI
Foxo Transcription Factors are Required for Maintenance of Acute Myeloid Leukemia
Ruolo: Investigatore Principale

2015 – 2018 R21 CA195356, NIH/NCI
Role of ThPOK in HSC Maintenance and Leukemogenesis
Ruolo: Co-Investigatore Principale
PI: Kappes

2016 - 2018 PA DOH CURE SAP # 4100072553, State of Pennsylvania Tobacco Settlement Funds. Improving BH3-mimetic Effectiveness in the Treatment of Acute Myeloid Leukemia
Ruolo: Investigatore Principale

2018 - 2019 New Idea Award W81XWH-18-1-0472, Department of Defense. Targeting the Unfolded Protein Response in Pediatric Leukemia
Ruolo: Investigatore Principale

2019 - 2024 R01 CA227830, NIH/NCI. Targeting the Unfolded Protein Response in Leukemia Biology and Chemotherapy Resistance
Ruolo: Investigatore Principale

2019 - 2021 K99 CA241370, NIH/NCI. Defining and Targeting the Metabolic Landscape in Acute Myeloid Leukemia Ruolo: Co-Investigator/Mentore
PI: Di Marcantonio

2020 – 2021 R01 HL150190-01A1, NIH/NHLBI. The Ruolo of Microhomology-mediated End Joining in Fanconi Anemia Pathogenesis
Ruolo: Co-Investigator

PI: Johnson

2021 - 2023 R01 HL149946, NIH/NHLBI. Cytokine mediated regulation of stress myelopoiesis in abdominal aortic aneurysm
Ruolo: Co-Investigator
PI: Dr. Ekaterina Koltzova

Finanziamenti Non Governativi Completati

2013 - 2014 W.W. Smith Foundation. Control of Redox Homeostasis by JNK Signaling in Acute Myeloid Leukemia: Mechanisms and Therapeutic Implications.
Ruolo: Investigatore Principale

2014 - 2016 Junior Scholar Award, American Society of Hematology. Targeting Molecular Regulators of Redox Homeostasis to Treat Acute Myeloid Leukemia
Ruolo: Investigatore Principale

2019-2023 RSG-18-195-01-DDC, Research Scholar Grant, American Cancer Society. Elucidation and Exploitation of the Pre-leukemia Functions of ATF3 and JUN.
Ruolo: Investigatore Principale

2019-2024 FDN-2022-1081, Saint Louis Children's Hospital Foundation, Pedal-The-Cause. Defining the Role of One-Carbon Metabolism in Acute Myeloid Leukemia
Ruolo: Investigatore Principale

2022-2023 Large-Scale Collaborative Initiative MC-LI-2022-974, Children's Discovery Institute Epigenetic and metabolic vulnerabilities in pediatric AML
Ruolo: Co-Investigatore Principale
PI: Magee

Finanziamenti Governativi Attuali

2023 - 2028 R01 CA273127, NIH/NCI. Determining the Role and Targeting potential of Serine Metabolism in aggressive sub-types of Acute Myeloid Leukemia
Ruolo: Investigatore Principale

Finanziamenti Non Governativi Attuali

2023 - 2025 Pre-P01, Gabrielle's Angel Foundation. Epigenetic and metabolic vulnerabilities in high-risk pediatric acute myeloid leukemia
Ruolo: Co-Investigator
PI: Magee

2025 - 2026 Pre-R01, Siteman Cancer Institute. Defining How The Role of DDIT4 in Mitochondrial Metabolism and Turnover Impacts Chemotherapy Responses in Acute Myeloid Leukemia
Ruolo: Investigatore Principale

Pubblicazioni

1. La P, Morgan TA, **Sykes SM**, Mao H, Schnepp RW, Petersen CD, Hua X. Fusion proteins of retinoid receptors antagonize TGF-beta-induced growth inhibition of lung epithelial cells. *Oncogene*. 2003;22(2):198-210. PMID:12527889
2. Jin S, Mao H, Schnepp RW, **Sykes SM**, Silva AC, D'Andrea AD, Hua X. Menin associates with FANCD2, a protein involved in repair of DNA damage. *Cancer Res*. 2003;63(14):4204-10. PMID:12874027
3. Schnepp RW, Mao H, **Sykes SM**, Zong WX, Silva A, La P, Hua X. Menin induces apoptosis in murine embryonic fibroblasts. *J Biol Chem*. 2004;279(11):10685-91. PMCID:PMC2858560 PMID:14688275
4. **Sykes SM**, Mellert HS, Holbert MA, Li K, Marmorstein R, Lane WS, McMahon SB. Acetylation of the p53 DNA-binding domain regulates apoptosis induction. *Mol Cell*. 2006;24(6):841-51. PMCID:PMC1766330 PMID:17189187
5. Mellert H, **Sykes SM**, Murphy ME, McMahon SB. The ARF/oncogene pathway activates p53 acetylation within the DNA binding domain. *Cell Cycle*. 2007;6(11):1304-6. PMID:17534149
6. Zhang XY, Varthi M, **Sykes SM**, Phillips C, Warzecha C, Zhu W, Wyce A, Thorne AW, Berger SL, McMahon SB. The putative cancer stem cell marker USP22 is a subunit of the human SAGA complex required for activated transcription and cell- cycle progression. *Mol Cell*. 2008;29(1):102-11. PMCID:PMC2254522 PMID:182069737.
7. Pietsch EC, **Sykes SM**, McMahon SB, Murphy ME. The p53 family and programmed cell death. *Oncogene*. 2008;27(50):6507-21. PMCID:PMC2657599 PMID:18955976
8. **Sykes SM**, Stanek TJ, Frank A, Murphy ME, McMahon SB. Acetylation of the DNA binding domain regulates transcription-independent apoptosis by p53. *J Biol Chem*. 2009;284(30):20197-205. PMCID:PMC2740446 PMID:19494119
9. Lane SW, **Sykes SM**, Al-Shahrour F, Shterental S, Paktinat M, Lo Celso C, Jesneck JL, Ebert BL, Williams DA, Gilliland DG. The Apc(min) mouse has altered hematopoietic stem cell function and provides a model for MPD/MDS. *Blood*. 2010;115(17):3489-97. PMCID:PMC2867262 PMID:20197553
10. Parmar K, Kim J, **Sykes SM**, Shimamura A, Stuckert P, Zhu K, Hamilton A, Deloach MK, Kutok JL, Akashi K, Gilliland DG, D'andrea A. Hematopoietic stem cell defects in mice with deficiency of Fancd2 or Usp1. *Stem Cells*. 2010;28(7):1186-95. PMCID:PMC2910804 PMID:20506303
11. Mellert HS, Stanek TJ, **Sykes SM**, Rauscher FJ 3rd, Schultz DC, McMahon SB. Deacetylation of the DNA-binding domain regulates p53-mediated apoptosis. *J Biol Chem*. 2011;286(6):4264-70. PMCID:PMC3039376 PMID:21148320
12. Cornejo MG, Mabialah V, **Sykes SM**, Khandan T, Lo Celso C, Lopez CK, Rivera- Muñoz P, Rameau P, Tothova Z, Aster JC, DePinho RA, Scadden DT, Gilliland DG, Mercher T. Crosstalk between NOTCH and AKT signaling during murine megakaryocyte lineage specification. *Blood*. 2011;118(5):1264-73. PMCID:PMC3152494 PMID:21653327
13. **Sykes SM**, Lane SW, Bullinger L, Kalaitzidis D, Yusuf R, Saez B, Ferraro F, Mercier F, Singh H, Brumme KM, Acharya SS, Scholl C, Tothova Z, Attar EC, Fröhling S, DePinho RA, Armstrong SA, Gilliland DG, Scadden DT. AKT/FOXO signaling enforces reversible differentiation blockade in myeloid leukemias. *Cell*. 2011;146(5):697-708. PMCID:PMC3826540 PMID:21884932
14. Lane SW, Wang YJ, Lo Celso C, Ragu C, Bullinger L, **Sykes SM**, Ferraro F, Shterental S, Lin CP, Gilliland DG, Scadden DT, Armstrong SA, Williams DA. Differential niche and

Wnt requirements during acute myeloid leukemia progression. *Blood*. 2011;118(10):2849-56. PMCID:PMC3172801 PMID:21765021
15. Ferraro F, Lymperi S, Méndez-Ferrer S, Saez B, Spencer JA, Yeap BY, Masselli E, Graiani G, Prezioso L, Rizzini EL, Mangoni M, Rizzoli V, **Sykes SM**, Lin CP, Frenette PS, Quaini F, Scadden DT. Diabetes impairs hematopoietic stem cell mobilization by altering niche function. *Sci Transl Med*. 2011;3(104):104ra101. PMCID:PMC3754876 PMID:21998408
16. Kalaitzidis D, **Sykes SM**, Wang Z, Punt N, Tang Y, Ragu C, Sinha AU, Lane SW, Souza AL, Clish CB, Anastasiou D, Gilliland DG, Scadden DT, Guertin DA, Armstrong SA. mTOR complex 1 plays critical roles in hematopoiesis and Pten-loss- evoked leukemogenesis. *Cell Stem Cell*. 2012;11(3):429-39. PMCID:PMC3743253 PMID:22958934
17. Faber K, Bullinger L, Ragu C, Garding A, Mertens D, Miller C, Martin D, Walcher D, Döhner K, Döhner H, Claus R, Plass C, **Sykes SM**, Lane SW, Scholl C, Fröhling S. CDX2-driven leukemogenesis involves KLF4 repression and deregulated PPARγ signaling. *J Clin Invest*. 2013;123(1):299-314. PMCID:PMC3533294 PMID:23202735
18. **Sykes SM**, Scadden DT. Modeling human hematopoietic stem cell biology in the mouse. *Semin Hematol*. 2013;50(2):92-100. PMCID:PMC3826087 PMID:24216169
19. Gobbi G, Mirandola P, Carubbi C, Masselli E, **Sykes SM**, Ferraro F, Nouvenne A, Thon JN, Italiano JE Jr, Vitale M. Proplatelet generation in the mouse requires PKCε-dependent RhoA inhibition. *Blood*. 2013;122(7):1305-11. PMCID:PMC3952532 PMID:23838351
20. Placke T, Faber K, Nonami A, Putwain SL, Salih HR, Heidel FH, Krämer A, Root DE, Barbie DA, Krivtsov AV, Armstrong SA, Hahn WC, Huntly BJ, **Sykes SM**, Milsom MD, Scholl C, Fröhling S. Requirement for CDK6 in MLL-rearranged acute myeloid leukemia. *Blood*. 2014;124(1):13-23. PMCID:PMC4190617 PMID:24764564
21. Saez B, Ferraro F, Yusuf RZ, Cook CM, Yu VW, Pardo-Saganta A, **Sykes SM**, Palchaudhuri R, Schajnovitz A, Lotinun S, Lymperi S, Mendez-Ferrer S, Toro RD, Day R, Vasic R, Acharya SS, Baron R, Lin CP, Yamaguchi Y, Wagers AJ, Scadden DT. Inhibiting stromal cell heparan sulfate synthesis improves stem cell mobilization and enables engraftment without cytotoxic conditioning. *Blood*. 2014;124(19):2937-47. PMCID:PMC4224192 PMID:25202142
22. Lee D, **Sykes SM**, Kalaitzidis D, Lane AA, Kfoury Y, Raaijmakers MH, Wang YH, Armstrong SA, Scadden DT. Transmembrane Inhibitor of RICTOR/mTORC2 in Hematopoietic Progenitors. *Stem Cell Reports*. 2014;3(5):832-40. PMCID:PMC4235746 PMID:25418727
23. Limon JJ, So L, Jellbauer S, Chiu H, Corado J, **Sykes SM**, Raffatellu M, Fruman DA. mTOR kinase inhibitors promote antibody class switching via mTORC2 inhibition. *Proc Natl Acad Sci U S A*. 2014;111(47):E5076-85. PMCID:PMC4250172 PMID:25385646
24. Di Marcantonio D, Galli D, Carubbi C, Gobbi G, Queirolo V, Martini S, Merighi S, Vaccarezza M, Maffulli N, **Sykes SM**, Vitale M, Mirandola P. PKCε as a novel promoter of skeletal muscle differentiation and regeneration. *Exp Cell Res*. 2015;339(1):10-9. PMCID:PMC5130411 PMID:26431586
25. **Sykes SM**, Kokkaliaris KD, Milsom MD, Levine RL, Majeti R. Clonal evolution of preleukemic hematopoietic stem cells in acute myeloid leukemia. *Exp Hematol*. 2015;43(12):989-92. PMCID:PMC5492948 PMID:26455528
26. Monteith JA, Mellert H, Sammons MA, Kuswanto LA, **Sykes SM**, Resnick- Silverman L, Manfredi JJ, Berger SL, McMahon SB. A rare DNA contact mutation in cancer confers p53

gain-of-function and tumor cell survival via TNFAIP8 induction. *Mol Oncol*. 2016;10(8):1207-20. PMCID:PMC5423199 PMID:27341992

27. Zhou C, Martinez E, Di Marcantonio D, Solanki-Patel N, Aghayev T, Peri S, Ferraro F, Skorski T, Scholl C, Fröhling S, Balachandran S, Wiest DL, **Sykes SM**. JUN is a key transcriptional regulator of the unfolded protein response in acute myeloid leukemia. *Leukemia*. 2017;31(5):1196-1205. PMCID:PMC5473421 PMID:27840425
28. Nieborowska-Skorska M, Sullivan K, Dasgupta Y, Podszywalow-Bartnicka P, Hoser G, Maifrede S, Martinez E, Di Marcantonio D, Bolton-Gillespie E, Cramer-Morales K, Lee J, Li M, Slupianek A, Gritsyuk D, Cerny-Reiterer S, Seferynska I, Stoklosa T, Bullinger L, Zhao H, Gorbunova V, Piwocka K, Valent P, Civin CI, Muschen M, Dick JE, Wang JC, Bhatia S, Bhatia R, Eppert K, Minden MD, **Sykes SM**, Skorski T. Gene expression and mutation-guided synthetic lethality eradicates proliferating and quiescent leukemia cells. *J Clin Invest*. 2017;127(6):2392- 2406. PMCID:PMC5451241 PMID:28481221
29. Maifrede S, Martinez E, Nieborowska-Skorska M, Di Marcantonio D, Hulse M, Le BV, Zhao H, Piwocka K, Tempera I, **Sykes SM**, Skorski T. MLL-AF9 leukemias are sensitive to PARP1 inhibitors combined with cytotoxic drugs. *Blood Adv*. 2017;1(19):1467-1472. PMCID:PMC5728460 PMID:29296788
30. Di Marcantonio D, Martinez E, Sidoli S, Vadaketh J, Nieborowska-Skorska M, Gupta A, Meadows JM, Ferraro F, Masselli E, Challen GA, Milsom MD, Scholl C, Fröhling S, Balachandran S, Skorski T, Garcia BA, Mirandola P, Gobbi G, Garzon R, Vitale M*, **Sykes SM***. Protein Kinase C Epsilon Is a Key Regulator of Mitochondrial Redox Homeostasis in Acute Myeloid Leukemia. *Clin Cancer Res*. 2018;24(3):608-618. PMCID:PMC5796864 PMID:29127121, *co-corresponding
31. Maifrede S, Nieborowska-Skorska M, Sullivan-Reed K, Dasgupta Y, Podszywalow-Bartnicka P, Le BV, Solecka M, Lian Z, Belyaeva EA, Nersesyan A, Machnicki MM, Toma M, Chatain N, Rydzanicz M, Zhao H, Jelinek J, Piwocka K, Sliwinski T, Stoklosa T, Ploski R, Fischer T, **Sykes SM**, Koschmieder S, Bullinger L, Valent P, Wasik MA, Huang J, Skorski T. Tyrosine kinase inhibitor-induced defects in DNA repair sensitize FLT3(ITD)-positive leukemia cells to PARP1 inhibitors. *Blood*. 2018;132(1):67-77. PMCID:PMC6034642 PMID:29784639
32. Nacson J, Krais JJ, Bernhardy AJ, Clausen E, Feng W, Wang Y, Nicolas E, Cai KQ, Tricarico R, Hua X, DiMarcantonio D, Martinez E, Zong D, Handorf EA, Bellacosa A, Testa JR, Nussenzweig A, Gupta GP, **Sykes SM**, Johnson N. BRCA1 Mutation-Specific Responses to 53BP1 Loss-Induced Homologous Recombination and PARP Inhibitor Resistance. *Cell Rep*. 2018;24(13):3513-3527.e7. PMCID:PMC6219632 PMID:30257212
33. Rudat S, Pfaus A, Cheng YY, Holtmann J, Ellegast JM, Bühler C, Marcantonio DD, Martinez E, Göllner S, Wickenhauser C, Müller-Tidow C, Lutz C, Bullinger L, Milsom MD, **Sykes SM**, Fröhling S, Scholl C. RET-mediated autophagy suppression as targetable co-dependence in acute myeloid leukemia. *Leukemia*. 2018;32(10):2189-2202. PMID:29654265
34. Masselli E, Carubbi C, Cambò B, Pozzi G, Gobbi G, Mirandola P, Follini E, Pagliaro L, Di Marcantonio D, Bonatti F, Percesepe A, **Sykes SM**, Aversa F, Vitale M. The -2518 A/G polymorphism of the monocyte chemoattractant protein-1 as a candidate genetic predisposition factor for secondary myelofibrosis and biomarker of disease severity. *Leukemia*. 2018;32(10):2266-2270. PMCID:PMC6170394 PMID:29568096

35. Di Marcantonio D, **Sykes SM**. Flow Cytometric Analysis of Mitochondrial Reactive Oxygen Species in Murine Hematopoietic Stem and Progenitor Cells and MLL-AF9 Driven Leukemia. *J Vis Exp*. 2019;(151). PMCID:PMC7239511 PMID:31545325
36. Peshkova IO, Aghayev T, Fatkhullina AR, Makhov P, Titerina EK, Eguchi S, Tan YF, Kossenkov AV, Khoreva MV, Gankovskaya LV, **Sykes SM***, Koltsova EK*. IL-27 receptor-regulated stress myelopoiesis drives abdominal aortic aneurysm development. *Nat Commun*. 2019;10(1):5046. PMCID:PMC6834661 PMID:31695038, *co-corresponding
37. Nacson J, Di Marcantonio D, Wang Y, Bernhardy AJ, Clausen E, Hua X, Cai KQ, Martinez E, Feng W, Callén E, Wu W, Gupta GP, Testa JR, Nussenzweig A, **Sykes SM**, Johnson N. BRCA1 Mutational Complementation Induces Synthetic Viability. *Mol Cell*. 2020;78(5):951-959.e6. PMCID:PMC7418109 PMID:32359443
38. Stanek TJ, Gennaro VJ, Tracewell MA, Di Marcantonio D, Pauley KL, Butt S, McNair C, Wang F, Kossenkov AV, Knudsen KE, Butt T, **Sykes SM**, McMahon SB. The SAGA complex regulates early steps in transcription via its deubiquitylase module subunit USP22. *EMBO J*. 2021;e102509. PMID:3415565839.
39. Di Marcantonio D, Martinez E, Kanefsky JS, Huhn JM, Gabbasov R, Gupta A, Krais JJ, Peri S, Tan Y, Skorski T, Dorrance A, Garzon R, Goldman AR, Tang HY, Johnson N, **Sykes SM**. ATF3 coordinates serine and nucleotide metabolism to drive cell cycle progression in acute myeloid leukemia. *Mol Cell*. 2021;81(13):2752-2764.e6. PMID:34081901
40. Maifrede S, Le BV, Nieborowska-Skorska M, Golovine K, Sullivan-Reed K, Dunuwille WMB, Nacson J, Hulse M, Keith K, Madzo J, Caruso LB, Gazze Z, Lian Z, Padella A, Chitrala KN, Bartholdy BA, Matlawska-Wasowska K, Di Marcantonio D, Simonetti G, Greiner G, **Sykes SM**, Valent P, Paietta EM, Tallman MS, Fernandez HF, Litzow MR, Minden MD, Huang J, Martinelli G, Vassiliou GS, Tempera I, Piwocka K, Johnson N, Challen GA, Skorski T. TET2 and DNMT3A Mutations Exert Divergent Effects on DNA Repair and Sensitivity of Leukemia Cells to PARP Inhibitors. *Cancer Res*. 2021. PMID:34215619
41. Zhang Y, Truong B, Fahl SP, Martinez E, Cai KQ, Al-Saleem ED, Gong Y, Liebermann DA, Soboloff J, Dunbrack R, Levine RL, Fletcher S, Kappes D, **Sykes SM**, Shapiro P, Wiest DL. The ERK2-DBP domain opposes pathogenesis of a mouse JAK2V617F-driven myeloproliferative neoplasm. *Blood*. 2022;140(4):359-373. PMID:35436326
42. Vekariya U, Toma M, Nieborowska-Skorska M, Le BV, Caron MC, Kukuyan AM, Sullivan-Reed K, Podszywalow-Bartnicka P, Chitrala KN, Atkins J, Drzewiecka M, Feng W, Chan J, Chatla S, Golovine K, Jelinek J, Sliwinski T, Ghosh J, Matlawska-Wasowska K, Chandramouly G, Nejati R, Wasik M, **Sykes SM**, Piwocka K, Hadzijusufovic E, Valent P, Pomerantz RT, Morton G, Childers W, Zhao H, Paietta EM, Levine RL, Tallman MS, Fernandez HF, Litzow MR, Gupta GP, Masson JY, Skorski T. DNA polymerase θ protects leukemia cells from metabolically induced DNA damage. *Blood*. 2023;141(19):2372-2389. PMCID:PMC10273171 PMID:36580665
43. He F, Laranjeira AB, Kong T, Lin S, Ashworth KJ, Liu A, Lasky NM, Fisher DA, Cox MJ, Fulbright MC, Antunes-Heck L, Yu L, Brakhane M, Gao B, **Sykes SM**, D'Alessandro A, Di Paola J, Oh ST. Multiomic profiling reveals metabolic alterations mediating aberrant platelet activity and inflammation in myeloproliferative neoplasms. *J Clin Invest*. 2024;134(3). PMCID:PMC10836808 PMID:38060311
44. Kanefsky J, Basse M, Sokei J, di Martino O, Valin L, Jaspers Y, Martinez E, Huhn J, Di Marcantonio D, Magee JA, Goldman AR, Tang HY, Ferraro F, Kemp S, Wiest DL*, **Sykes**

SM*. Disruption of polyunsaturated fatty acid biosynthesis drives STING- dependent acute myeloid leukemia cell maturation and death. *J Biol Chem*. 2024;300(5):107214. PMCID:PMC11061745 PMID:38522521, *co-corresponding

45. Arthur NBJ, Christensen KA, Mannino K, Ruzinova MB, Kumar A, Gruszczynska A, Day RB, Erdmann-Gilmore P, Mi Y, Sprung R, York CR, Townsend RR, Spencer DH, **Sykes SM**, Ferraro F. Missense Mutations in Myc Box I Influence Nucleocytoplasmic Transport to Promote Leukemogenesis. *Clin Cancer Res*. 2024;30(16):3622-3639. PMCID:PMC11326984 PMID:38848040
46. Sokei J, Kanefsky J, **Sykes SM**. Reprogramming of Fatty Acid Metabolism in Acute Leukemia. J Cell Physiol. 2025 Jan;240(1):e70000. doi: 10.1002/jcp.70000. PMID: 39835485.

Dottorandi, borsisti, studenti di medicina e specializzandi seguiti in qualità di mentore

2012 – 2016 Chun Zhou - Fellow, Fox Chase Cancer Center
Attualmente, Associate Scientific Director, PRECISIONscientia

2012 – 2013 Francesca Ferraro - Fellow, Fox Chase Cancer Center
Attualmente, Professore Assistente, Tenure-Track at Washington University in Saint Louis

2014 Philip Kappes - Studente, University of Pittsburgh

2015 – 2017 Jake Meadows - Studente, University of Pittsburgh

2015 – 2017 Jessica Vadaketh - Studente, Ursinus College

2015 Victoria Shust – Studente, Penn State University

2016 – 2018 Anushk Gupta - Studente, Boston University

2019 Rashid Gabbasov - Specializzando, Fox Chase Cancer Center
Attualmente Carisma Therapeutics, Scientist II, 2019 - Present

2015 – 2021 Daniela Di Marcantonio – Ricercatrice Post-Dottorato, Fox Chase Cancer Center
Attualmente, Senior Scientist at GlaxoSmithKline

2019-2023 Jacklyn Huhn – Dottoranda (PhD student), Temple University Health System – Fox Chase Cancer Center

2018 – 2024 Joice Kanefsky – Dottoranda (PhD Student), Temple University Health System – Fox Chase Cancer Center

2021 – 2024 Orsola di Martino - Instructor, Washington University in Saint Louis
Attualmente Professore Assistente, Tenure Track, University Hospital in Parma, Parma, Italy

2022-Pres Judith Sokei - Dottoranda (PhD Student), Washington University in Saint Louis - Division of Biological and Biomedical Studies

2024-Pres Nishanth Gabriel – Ricercatore a Tempo Determinato, Washington University in Saint Louis