

Mohammed Toufiq

Bioinformatics Analyst I
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Recent Employment and Positions

Oct 2022 – Present	Bioinformatics Analyst I The Jackson Laboratory for Genomic Medicine, Farmington, Connecticut, United States
Apr 2018 – Oct 2022	Research Specialist – II (Bioinformatics) (Apr 2021–Oct 2022), Research Specialist – I (Bioinformatics) (Apr 2018–Apr 2021), Laboratory of Systems Immunology, Division of Translational Medicine, Sidra Medicine, Doha, Qatar
Nov 2013 – Apr 2018	Associate QA Engineer - IV (Aug 2017–Apr 2018) Associate Application Specialist – IV (Dec 2016–Aug 2017) Associate Support Engineer – II (Apr 2015–Nov 2016) Scientist - I Support (Nov 2013–Mar 2015) Software & Bioinformatics Department Strand Life Sciences Pvt Ltd, Bangalore, India
Jun 2013 – Oct 2013	Research Project Associate (Bioinformatics) Sir M Visvesvaraya Institute of Technology, Bangalore, India

Education

2024 – Present	PhD in Systems Genomics (In Progress) Institute for Systems Genomics University of Connecticut, Storrs, United States <u>Thesis Advisor</u> : Karolina Palucka, MD, PhD
2009 – 2013	Bachelor of Engineering in Biotechnology Sir M Visvesvaraya Institute of Technology, Bangalore, India <u>affiliated to</u> Visvesvaraya Technological University, Belagavi, India. <u>Duration</u> : 4 years (8 semesters)
2007 – 2009	Physics, Chemistry, Mathematics, and Biology St. Joseph's Indian Composite Pre-University College, Bangalore, India. <u>Duration</u> : 2 years

Research Awards

1. Outstanding Research Specialist Award – Recognized for the Best 2021 Publication – Junior Scientist (PMID: 34663591) and Best Poster Presentation Award at Sidra Research Day, Sidra Medicine, Doha, Qatar. (November 20, 2021).
2. Travel Grant Award – Funded by the Qatar National Research Fund (QNRF-NPRP10-0205-170348) for conducting the Collective Omics Data Training Workshop, led by Dr. Damien Chaussabel (Sidra Medicine, Qatar). The hands-on workshop, held at the Mahidol Oxford Tropical Medicine Research Unit (MORU), Bangkok, Thailand, trained ~40 attendees on novel candidate gene discovery in sepsis pathogenesis using public omics data. The methodology was detailed in a review paper (COD1 training module – PMID: 29705995). (December 1–7, 2018).

Publications

Peer-Reviewed Publications

<https://pubmed.ncbi.nlm.nih.gov/?term=Mohammed+Toufiq&sort=date&size=20>

1. Khan T, **Toufiq M**, Yurieva M, ..., Rinchai D, Chaussabel D. Automating Candidate Gene Prioritization with Large Language Models: From Naïve Scoring to Literature-Grounded Validation. *Bioinformatics (Oxford)*. 2025 Oct 10:btaf541. (PMID: 41071041)
2. Kabeer B, Subba B, Rinchai D, **Toufiq M**, Khan T, Yurieva M, Chaussabel D. From Gene Modules to Gene Markers: An Integrated AI-Human Approach Selects CD38 to Represent Plasma Cell-Associated Transcriptional Signatures. *Front Med (Lausanne)*. 2025 Mar 12:12:1510431 (PMID: 40144871)
3. Bar M, El Anbari M, Rinchai D, **Toufiq M**, ..., Deola S. Whole-Blood Longitudinal Molecular Profiling Maps the Road of Graft Versus Host Disease (GVHD). *Cancers (Basel)*. 2025 Feb 26;17(5):802. (PMID: 40075650)
4. Tout I, Bougarn S, **Toufiq M**, ..., Wang X, Macalli C. The integrative genomic and functional immunological analyses of colorectal cancer initiating cells to modulate stemness properties and the susceptibility to immune responses. *J Transl Med*. 2025 Feb 17;23(1):193. (PMID: 39962504)
5. Subba B, **Toufiq M**, Omi F, Yurieva M, Khan T, Rinchai D, Palucka K, Chaussabel D. Human-augmented large language model-driven selection of glutathione peroxidase 4 as a candidate blood transcriptional biomarker for circulating erythroid cells. *Sci Rep*. 2024 Oct 5;14(1):23225. (PMID:39369090)
6. Huang SSY, **Toufiq M**, Eghtesady P, Van Panhuys N, Rinchai D, Garand M. The molecular landscape of sepsis severity in infants: enhanced coagulation, innate immunity, and T cell repression. *Front Immunol*. 2024 May 16:15:1281111. (PMID:38817614)
7. Rinchai D, Brummaier T, A Marr A, Habib T, **Toufiq M**, Kino T, Nosten F, Al Khodor S, Terranegra A, McGready R, Kabeer BSA, Chaussabel D. A data browsing application for accessing gene and module-level blood transcriptome profiles of healthy pregnant women from high- and low-resource settings. *Database (Oxford)*. 2024 Apr 2:2024:baae021. (PMID:38564425)

8. Brummaier T, Rinchai D, **Toufiq M**, Karim MY, Habib T, Utzinger J, Paris DH, McGready R, Marr AK, Kino T, Terranegra A, Al Khodor S, Chaussabel D, Syed Ahamed Kabeer B. Design of a targeted blood transcriptional panel for monitoring immunological changes accompanying pregnancy. *Front Immunol*. 2024 Jan 30;15:1319949. (PMID:38352867)
9. Rashid A, Al-Obeidat F, Kanthimathinathan HK, Benakatti G, Hafez W, Ramaiah R, Brierley J, Hanisch B, Khilnani P, Koutentis C, Brusletto BS, **Toufiq M**, ..., Hussain A. Advancing sepsis clinical research: harnessing transcriptomics for an omics-based strategy - a comprehensive scoping review. *Informatics in Medicine Unlocked*. Volume 44, 2024, 101419. (DOI: 10.1016/j.imu.2023.101419)
10. Rashid A, Benakatti G, Al-Obeidat F, Phatak R, Malik ZA, Sharief J, Kadwa R, Hafez W, **Toufiq M**, ..., Hussain A. A dual covariant biomarker approach to Kawasaki disease, using vascular endothelial growth factor A and B gene expression; implications for coronary pathogenesis. *Informatics in Medicine Unlocked*. Volume 43, 2023, 101384. (DOI: 10.1016/j.imu.2023.101384)
11. **Toufiq M***, **Rinchai D*** (co-first author), Bettacchioli E, Kabeer BSA, Khan T, Subba B, White O, Yurieva M, George J, Jourde-Chiche N, Chiche L, Palucka K, Chaussabel D. Harnessing Large Language Models (LLMs) for candidate gene prioritization and selection. *J Transl Med*. 2023 Oct 16;21(1):728. (PMID:37845713)
12. Rashid A, Brusletto BS, Al-Obeidat F, **Toufiq M**, ..., Hussain A. A Transcriptomic Appreciation of Childhood Meningococcal and Polymicrobial Sepsis from a Pro-inflammatory and Trajectory Perspective, a Role for VEGF-A and VEGF-B Modulation? *Shock*. 2023 Oct 1;60(4):503-516 (PMID:37553892)
13. Rashid A, Anwary AR, Al-Obeidat F, Brierley J, Uddin M, Alkhzaimi H, Sarpal A, **Toufiq M**, ..., Hussain A. Application of a gene modular approach for clinical phenotype genotype association and sepsis prediction using machine learning in meningococcal sepsis. *Informatics in Medicine Unlocked*. Volume 41, 2023 101293. (DOI: 10.1016/j.imu.2023.101293)
14. Al Ali F, Marr AK, Tatari-Calderone Z, Alfaki M, **Toufiq M**, Roelands J, Kabeer BSA, Bedognetti D, Marr N, Garand M, Rinchai D, Chaussabel D. Organizing training workshops on gene literature retrieval, profiling, and visualization for early career researchers. *F1000Res*. 2023 May 11;10:275. (PMID:37448622)
15. Preechanukul A, Yimthin T, Tandhavanant S, Brummaier T, Chomkatekaew C, Das S, Syed Ahamed Kabeer B, **Toufiq M**, Rinchai D, West TE, Chaussabel D, Chantratita N, Garand M. Abundance of ACVR1B transcript is elevated during septic conditions: Perspectives obtained from a hands-on reductionist investigation. *Front Immunol* 2023;14:1072732. (PMID:37020544)
16. Rinchai D, Deola S, Zoppoli G, Kabeer BSA, Taleb S, Pavlovski I, Maacha S, Gentilcore G, **Toufiq M**, ..., Chaussabel D. High-temporal resolution profiling reveals distinct immune trajectories following the first and second doses of COVID-19 mRNA vaccines. *Sci Adv*. 2022 Nov 11;8(45):eabp9961. (PMID:36367935)
17. Sharari S, Kabeer B, Mohammed I, Haris B, Pavlovski I, Hawari I, Bhat AA, **Toufiq M**, Tomei S, Mathew R, Syed N, Nisar S, Maacha S, Grivel JC, Chaussabel D, Ericsson J, Hussain K. Understanding the Role of GLUT2 in Dysglycemia Associated with Fanconi-Bickel Syndrome. *Biomedicines*. 2022 Aug 29;10(9):2114. (PMID:36140215)
18. Huang SSY, Rinchai D, **Toufiq M**, Kabeer BSA, Roelands J, Hendrickx W, Boughorbel S, Bedognetti D, Van Panhuys N, Chaussabel D, Garand M. Transcriptomic profile investigations highlight a putative role for NUDT16 in sepsis. *J Cell Mol Med*. 2022 Mar;26(5):1714-1721. (PMID:35174610)
19. **Toufiq M***, **Huang SSY*** (co-first author), Boughorbel S, Alfaki M, Rinchai D, Saraiva LR, Chaussabel D, Garand M. SysInflam HuDB, a web resource for mining

- human blood cells transcriptomic data associated with systemic inflammatory responses to sepsis. *J Immunol*, 2021 Nov 1;207(9):2195. (PMID:34663591)
20. Huang SSY, **Toufiq M**, Saraiva LR, Van Panhuys N, Chaussabel D, Garand M. Transcriptome and Literature Mining Highlight the Differential Expression of ERLIN1 in Immune Cells during Sepsis. *Biology (Basel)*, 2021 Aug 5;10(8):755. (PMID:34439987)
 21. Altman MC, Rinchai D, Baldwin N, **Toufiq M**, ..., Chaussabel D. Development of a fixed module repertoire for the analysis and interpretation of blood transcriptome data. *Nature Communication*, 2021 Jul 19;12(1):4385. (PMID:34282143)
 22. Garand M, **Toufiq M**, Singh P, Huang SSY, Tomei S, Mathew R, Mattei V, Al Wakeel M, Sharif E, Al Khodor S. Immunomodulatory effects of vitamin D supplementation in a deficient population. *Int. J. Mol. Sci*, 2021 May 10;22(9):5041. (PMID:34068701)
 23. Rinchai D, Roelands J, **Toufiq M**, Hendrickx W, Altman MC, Bedognetti D, Chaussabel D. BloodGen3Module: blood transcriptional module repertoire analysis and visualization using R. *Bioinformatics*, 2021 Aug 25;37(16):2382-2389. (PMID:33624743)
 24. Rinchai D, Altman MC, Konza O, Hässler S, Martina F, **Toufiq M**, Garand M, Syed Ahamed Kabeer B, Palucka K, Mejias A, Ramilo O, Bedognetti D, Mariotti-Ferrandiz E, Klatzmann D, Chaussabel D. Definition of erythroid cell-positive blood transcriptome phenotypes associated with severe respiratory syncytial virus infection. *Clin Transl Med*, 2020 Dec;10(8):e244. (PMID:33377660)
 25. Rawat A, Rinchai D, **Toufiq M**, Marr AK, Kino T, Garand M, Tatari-Calderone Z, Syed Ahamed Kabeer B, Krishnamoorthy N, Bedognetti D, Karim MY, Sastry KS, Chaussabel D. A Neutrophil-Driven Inflammatory Signature Characterizes the Blood Transcriptome Fingerprint of Psoriasis. *Front Immunol*, 2020 Nov 24;11:587946. (PMID:33329570)
 26. **Rinchai D***, **Syed Ahamed Kabeer B***, **Toufiq M* (co-first author)**, Tatari-Calderone Z, Deola S, Brummaier T, Garand M, Branco R, Baldwin N, Alfaki M, Altman MC, Ballestrero A, Bassetti M, Zoppoli G, De Maria A, Tang B, Bedognetti D, Chaussabel D. A modular framework for the development of targeted Covid-19 blood transcript profiling panels. *J Transl Med*, 2020 Jul 31;18(1):291. (PMID:32736569)
 27. **Toufiq M**, Roelands J, Alfaki M, Syed Ahamed Kabeer B, Saadaoui M, Lakshmanan AP, Bangarusamy DK, Murugesan S, Bedognetti D, Hendrickx W, Al Khodor S, Terranegra A, Rinchai D, Chaussabel D, Garand M. Annexin A3 in sepsis: novel perspectives from an exploration of public transcriptome data. *Immunology*, 2020 Dec;161(4):291-302. (PMID:32682335)
 28. Mathew R, **Toufiq M**, Mattei V, Al Hashmi M, Shobha Manjunath H, Syed Ahamed Kabeer B, Calzone R, Cugno C, Chaussabel D, Deola S, Tomei S.. Influence of storage conditions of small volumes of blood on immune transcriptomic profiles. *BMC Res Notes*, 2020 Mar 13;13(1):150. (PMID:32169090)
 29. Roelands J, Garand M, Hinchcliff E, Ma Y, Shah P, **Toufiq M**, Alfaki M, Hendrickx W, Boughorbel S, Rinchai D, Jazaeri A, Bedognetti D, Chaussabel D. Long-Chain Acyl-CoA Synthetase 1 Role in Sepsis and Immunity: Perspectives From a Parallel Review of Public Transcriptome Datasets and of the Literature. *Front Immunol*, 2019 Oct 18;10:2410. (PMID:31681299)
 30. Riyapa D, Rinchai D, Muangsombut V, Wuttinontananchai C, **Toufiq M**, Chaussabel D, Ato M, Blackwell JM, Korbsrisate S. Transketolase and vitamin B1 influence on ROS-dependent neutrophil extracellular traps (NETs) formation. *PLoS One*, 2019 Aug 15;14(8):e0221016. (PMID:31415630)

31. Huang SSY, Al Ali F, Boughorbel S, **Toufiq M**, Chaussabel D, Garand M. A curated collection of transcriptome datasets to investigate the molecular mechanisms of immunoglobulin E-mediated atopic diseases. *Database (Oxford)*. 2019 Jan 1;2019:baz066. (PMID:31290545)
32. Brummaier T, Syed Ahamed Kabeer B, Lindow S, Konje JC, Pukrittayaamee S, Utzinger J, **Toufiq M**, Antoniou A, Marr AK, Suriyakan S, Kino T, Al Khodor S, Terranegra A, Nosten F, Paris DH, McGready R, Chaussabel D. A prospective cohort for the investigation of alteration in temporal transcriptional and microbiome trajectories preceding preterm birth: a study protocol. *BMJ Open*, 2019 Jan 15;9(1):e023417. (PMID:30782707)

Peer Reviewed Consortium Publications - PREDICT-19 consortium

1. Carney M, Pelaia TM, Chew T, ..., Short KR, **PREDICT-19 consortium**. Host transcriptomics and machine learning for secondary bacterial infections in patients with COVID-19: a prospective, observational cohort study. *Lancet Microbe*. 2024 Mar;5(3):e272-e281. (PMID:38310908)
2. Wang Y, Schughart K, Pelaia TM, ..., **PREDICT-19 consortium**, ..., Shojaei M. Pathway and Network Analyses Identify Growth Factor Signaling and MMP9 as Potential Mediators of Mitochondrial Dysfunction in Severe COVID-19. *Int J Mol Sci*. 2023 Jan 28;24(3):2524. (PMID:36768847)
3. Wang Y, Schughart K, Pelaia TM, ..., **PREDICT-19 consortium**, ..., Shojaei M. Blood transcriptome responses in patients correlate with severity of COVID-19 disease. *Front Immunol*. 2023 Jan 20;13:1043219. (PMID:36741372)

Preprints

1. Rinchai D, Deola S, Kabeer BSA, Gentilcore G, **Toufiq M**, Mathew L, Liu L, Vempalli FR, Mubarak G, Lorenz S, Augustine T, Van Panhuys N, Bedognetti D, Grivel J-C, Chaussabel D. Temporal Dynamics of Transcriptional Responses to Repeated mRNA Vaccination: Insights from Third Dose Profiling. *bioRxiv [Preprint]*. 2025 Jan 11. (DOI:10.1101/2025.01.09.631990)
2. Khan T, **Toufiq M**, Yurieva M, Indrawattana N, Jittmittraphap A, Kosoltanapiwat N, Pumirat P, Sukphopetch P, Vanaporn M, Kabeer B, Palucka K, Rinchai D, Chaussabel D. Automating Candidate Gene Prioritization with Large Language Models: Development and Benchmarking of an API-Driven Workflow Leveraging GPT-4. *bioRxiv [Preprint]*. 2024 Dec 16. (DOI:10.1101/2024.12.10.627808)
3. Rinchai D, Garand M, **Toufiq M**, Kabeer BSA, Marr N, Chaussabel D. CD2K: An Accessible Framework for Leveraging Public Omics Data in Biomedical Research Training. *Preprints.org [Preprint]*. 2024 Oct 11. (DOI:10.20944/preprints202410.0933.v1)
4. Khan T, Yurieva M, Kabeer BSA, **Toufiq M**, Rinchai D, Palucka K, Chaussabel D. Deep functional profiling of gene sets using Large Language Models: A blueprint for tailored, context-aware functional annotation. *bioRxiv [Preprint]*. 2024 Dec 19. (DOI:10.1101/2024.12.12.628275)
5. Sherif S, Ali A, Rinchai D, Elanbari M, Kizhakayil D, **Toufiq M**, Vempalli F, Mina T, Comoli P, Ghias K, Fadool Z, Herrera S, Lachica C-A, Dason B, Ejaz A, Saleh A, Deola S, Bedognetti D, Cugno C. Upregulation of interferon signaling predicts sustained complete remission in pediatric AML patients. *Research Square [Preprint]*. 2024 Mar 11. (DOI:10.21203/rs.3.rs-3990757/v1)

6. Marr AK, Boughorbel S, **Toufiq M**, El Anbari M, Chouchane AI, Kino T. In silico analysis of imprinted gene expression in the mouse skin. *bioRxiv [Preprint]*. 2022 Apr 26. (DOI:10.1101/2020.06.04.134031)
7. Kumar AD, **Toufiq M**, Narayan P, Nagendra H. Small Molecule Activators of PP2A Suggests Controlled Tau Phosphorylation as a Novel Mode of therapy for Alzheimer's disease. *Authorea [Preprint]*. 2020 Jul 02. (DOI: 10.22541/au.159366787.74758107)
8. Roelands J, Chiche L, Marches R, **Toufiq M**, Kabeer BA, Alfaki MAI, Saadaoui M, Lakshmanan AP, Bangarusamy DK, Murugesan S, Bedognetti D, Hendrickx W, Al Khodor S, Terranegra A, Banchereau J, Garand M, Chaussabel D, Rinchai D. Elevation of FAM129A in neutrophils exposed to serum of patients with severe sepsis: in silico investigations during a hands on training workshop and follow on validation of protein expression in neutrophils. *bioRxiv [Preprint]*. 2019 Jan 25. (DOI:10.1101/529446)

Application Note

1. **Toufiq M**, Deshmukh S, Ramachandru S, Cherukuri S. Integrated analysis using RNA-Seq and ChIP-Seq data to understand the regulation of cardiogenesis. *Published on Strand NGS website*, 2018. ([Reference](#))

Poster Presentation

1. **Toufiq M**, Castaneda, DC, ..., Chaussabel D. Integrating In Vitro Airway Models and Large-Language AI to Decipher Epithelial Responses to Influenza Virus. *Cooperative Centers on Human Immunology (CCHI) Annual Meeting, National Institutes of Allergy and Infectious Diseases (NIAID-NIH)*, December 7-8, 2023, Rockville, Maryland, United States. (*Poster Presentation*)
2. **Toufiq M**, Rinchai D, Kabeer BSA, Chaussabel D. Similarities in the Blood Transcriptional Signatures of Covid-19 Infection and Transcriptional Signatures of Influenza using a Blood Modular Repertoire Analysis Framework. *Precision Medicine and Functional Genomics (PMFG21)*, December 4-6, 2021, Doha, Qatar. (*Poster Presentation*)
3. **Toufiq M**, Kabeer BSA, Garand M, Rinchai D, Chaussabel D. In Depth Functional Annotation of a Blood Transcriptome Modular Framework in Pregnancy. *Maternal and Child Health Symposium (MCH)*, March 7-9, 2020, Qatar National Convention Center (QNCC) Doha, Qatar. (*Poster Presentation*)
4. Kabeer BSA, Brummaier T, Rinchai D, **Toufiq M**, ..., Chaussabel D. Monitoring Of Blood Transcriptional Changes During Pregnancy Using A Transcriptome Fingerprinting Assay. *Maternal and Child Health Symposium (MCH)*, March 7-9, 2020, Qatar National Convention Center (QNCC) Doha, Qatar. (*Co-authorship*)
5. Al Sulaiti A, Al Khulaifi M, Mathew R, Mattei V, **Toufiq M**, ..., Macalli C. The usage of umbilical cord blood from new born babies at Sidra Medicine to develop adoptive cell therapy (ACT) for both pediatric and adult cancer patients. *Maternal and Child Health Symposium (MCH)*, March 7-9, 2020, Qatar National Convention Center (QNCC) Doha, Qatar. (*Co-authorship*)
6. Huang SSY, **Toufiq M**, Chaussabel D, Garand M. Potential Role of ERLIN1 in Immunometabolism Regulation During Sepsis. *CUDOS - 3rd Annual Congress of Current Understanding in Diabetes, Obesity and Metabolic Syndromes*, November 20-26, 2019, Qatar National Convention Center (QNCC) Doha, Qatar. (*Co-authorship*)
7. Kabeer BSA, Brummaier T, **Toufiq M**, ..., Chaussabel D. Monitoring of Blood Transcriptional Changes During Pregnancy Using a Transcriptome Fingerprinting

- Assay. *DOHaD World Congress - The International Society for Developmental Origins of Health and Disease*, October 20-23, 2019, Melbourne, Australia. (Co-authorship)
8. Huang SSY, Hasan W, Sharade RS, **Toufiq M**, ..., Garand M. Immunology of Sepsis: Novel Implications for the Endoplasmic Reticulum Protein ERLIN1. *Keystone Symposia meeting on "Immunometabolism, Metaflammation and Metabolic Disorders"*, April 14-18, 2019, Vancouver, British Columbia, Canada. (Co-authorship)
 9. Riyapa D, Rinchai D, Muangsombut V, Wuttinontananchai C, **Toufiq M**, ..., Korbsrisate S. Transketolase and vitamin B1 influence on Staphylococcus aureus-mediated neutrophil extracellular traps formation. *29th ECCMID - European Congress of Clinical Microbiology & Infectious Disease*, April 13-16, 2019, Amsterdam, Netherlands. (Co-authorship)
 10. **Toufiq M**, Deshmukh S, Ramachandru S, Cherukuri S. Integrated analysis using RNA-Seq and ChIP-Seq data to understand the regulation of cardiogenesis. Poster. *2017 Annual Meeting of The American Society of Human Genetics (ASHG)*, October 17-21, 2017, Orlando, Florida, United States. (Poster Presentation)
 11. Kumar J, **Toufiq M**, Nagendra HG. Computational Studies of PP2A with Small Molecule Activators Suggests Decreased Tau Phosphorylation and Reduced NFT in Alzheimer's disease. *International conference on innovations in Biotechnology*. August 10-14, 2013, Kollam, Kerala, India. (Co-authorship)

Peer-Reviewed Conference Abstracts

1. Tout I, **Toufiq M**, Missous GN, Chin-Smith E, ..., Maccalli C. P065 The evolution of inflammatory bowel disease can be monitored through multi-omics characterization of gut tissues. *Journal of Crohn's and Colitis*, Volume 18, Issue Supplement_1, January 2024, Page i335. (DOI:10.1093/ecco-jcc/jjad212.0195)
2. El Anbari M, Bar M, **Toufiq M**, Rinchai D, ..., Deola S. Neutrophil Activation Is a Diagnostic and Candidate Prognostic Biomarker of Acute GVHD. *American Society of Hematology, Blood*, Volume 142, Supplement 1, 2 November 2023, Page 2186. (DOI:10.1182/blood-2023-174486)
3. Al Sulaiti A, El Anbari M, **Toufiq M**, ..., Maccalli C. 226 'Off-the-shelf' CD19-CAR-T cells generated from umbilical cord blood display superior anti-tumor fitness and lower pro-inflammatory activity as compared to peripheral blood-derived engineered T cells. *Journal for ImmunoTherapy of Cancer* 2023;11. (DOI: 10.1136/jitc-2023-SITC2023.0226)
4. Gupta I, **Toufiq M**, ..., Maccalli C. The application of multiomics to investigate the evolution of inflammatory bowel disease in pediatric and adult patients. *Journal of Crohn's and Colitis*, Volume 17, Issue Supplement_1, February 2023, Pages i246–i247. (DOI: 10.1093/ecco-jcc/jjac190.0211)
5. Ali AIK, Rinchai D, Deola S, Elanbari M, Kizhakayil D, Khedr SMS, **Toufiq M**, ..., Cugno C. Immuno-AML, a Novel Immunogenomic Classifier Predicting Chemotherapy Response in Pediatric Patients with AML. *American Society of Hematology, Blood*, (2022) 140 (Supplement 1): 11420–11422. (DOI:10.1182/blood-2022-158970)
6. Gopinath N, Habib T, **Toufiq M**, ..., Maccalli C. 1430 The immunological and genomic profiling of colorectal and breast cancer cell lines can distinguish stem like from differentiated tumor cells: implications for cancer immunotherapy. *Journal for ImmunoTherapy of Cancer* 2022;10. (DOI:10.1136/jitc-2022-SITC2022.1430)
7. Rashid A, Malik ZA, Khilnani P, Sharief J, Kadwa R, Brusletto B, **Toufiq M**, ..., Hussain A. PP126 The infant transcriptome in meningococcal septic shock: A force in

- precision cellular dysfunction suggesting a cytokine storm? *Pediatric Critical Care Medicine* 23(Supplement 1 11S): November 2022. (DOI:10.1097/01.pcc.0000900404.01933.4e)
8. Rashid A, Malik ZA, Khilnani P, Sharief J, Kadwa R, Brusletto BS, **Toufiq M**, ..., Hussain A. PP127 Heat shock transcription factor gene expression in pediatric and adult severe sepsis. *Pediatric Critical Care Medicine* 23(Supplement 1 11S):, November 2022. (DOI:10.1097/01.pcc.0000900408.25154.d7)
 9. Rashid A, Malik ZA, Khilnani P, Sharief J, Kadwa R, Brusletto BS, **Toufiq M**, ..., Hussain A. PP025 Vascular endothelial growth factor A and B inverse gene expression in Kawasaki disease and MIS-C—a clue to a counter-regulatory mechanism in pathogenesis? *Pediatric Critical Care Medicine* 23(Supplement 1 11S):, November 2022. (DOI:10.1097/01.pcc.0000900060.08184.68)
 10. Rashid A, Malik ZA, Khilnani P, Sharief J, Kadwa R, Brusletto BS, **Toufiq M**, ..., Hussain A. PP024 In-vitro and in-vivo vascular endothelial growth factor subtypes A & B in severe acute respiratory syndrome pathogenesis. *Pediatric Critical Care Medicine* 23(Supplement 1 11S):, November 2022. (DOI: 10.1097/01.pcc.0000900056.70010.a7)
 11. Al Sulaiti A, El-Anbari M, Jacob S, **Toufiq M**, ..., Maccalli C. 411 The multi-omics analyses of “off-the-shelf” CD19-CAR-T cells identifies the subpopulation complexity and the deep characterization of the anti-tumor properties. *Journal for ImmunoTherapy of Cancer* 2022;10. (DOI:10.1136/jitc-2022-SITC2022.0411)
 12. Al Sulaiti A, El-Anbari1 M, Al Khulaifi M, **Toufiq M**, ..., Macalli C. 102 The deep phenotype characterization of ‘Off-the-Shelf’ CD19-chimeric antigen receptor (CAR) T cells allows to identify their subset complexity and to optimize their manufacturing. *Journal for ImmunoTherapy of Cancer* 2021;9. (DOI:10.1136/jitc-2021-SITC2021.102)
 13. Merav B, Rinchai D, **Toufiq M**, ..., Deola S. Pre-Transplant Gene Expression May Predict Risk of Graft Versus Host Disease. *Blood*, Volume 136, Supplement 1, 5 November 2020, Page 13. (DOI:10.1182/blood-2020-142840)
 14. Al Sulaiti A, Al Khulaifi M, Ravindran S, El-Anbari1 M, **Toufiq M**, ..., Macalli C. 124 Optimizing the generation from umbilical cord blood of ‘off-the-shelf’ CD19-chimeric antigen receptor (CAR) expressing T cells. *Journal for ImmunoTherapy of Cancer* 2020;8. (DOI:10.1136/jitc-2020-SITC2020.0124)
 15. Merav B, Woo A, **Toufiq M**, ..., Deola S. Mapping the Road of Gvhd and GVT: A Longitudinal Study of Immune-Transcriptome Signatures As Novel Approach to Solve Post-Allogeneic Hematopoietic Cell Transplantation Dilemmas. *Blood*, Volume 134, Supplement 1, 13 November 2019, Page 4550. (DOI:10.1182/blood-2019-122884)
 16. Riyapa D, Rinchai D, Muangsombut V, Wuttinontananchai C, **Toufiq M**, Chaussabel D, Ato M, Korbsrisate S. P2306 Transketolase and vitamin B1 influence on Staphylococcus aureus-mediated neutrophil extracellular traps formation. 29th *European Congress of Clinical Microbiology & Infectious Diseases (ECCMID)* 2019. (DOI:10.13140/RG.2.2.29538.56008)

Ad Hoc Reviewer

1. **Journal Peer Reviewer:** BMC Infectious Diseases, BMC Pharmacology and Toxicology, Inflammation Research, Scientific Reports, Journal of Translational Medicine and Qeios.
2. **Judging:** Connecticut Science and Engineering Fair

Academic Workshops and Invited Lectures

1. Short talk titled "Isoform Expression Analysis in Lung Progenitor Cells: Building a Comprehensive Reference Isoforms using Lung Adenocarcinoma (LUAD) RNA-Seq Data" at Cooperative Centers on Human Immunology (CCHI) Annual Meeting, National Institutes of Allergy and Infectious Diseases (NIAID-NIH), Rockville, Maryland, United States, December 11, 2024.
2. Participated in "33rd Annual Short Course on Experimental Models of Human Cancer" at The Jackson Laboratory For Genomic Medicine, Bar Harbor, Maine, United States, August 4-12, 2024.
3. Participated in "Systems Immunology in Aging and Complex Diseases" at The Jackson Laboratory For Genomic Medicine, Farmington, Connecticut, United States, June 27-28, 2024.
4. Short talk titled "Integrating In Vitro Airway Models and Large-Language AI to Decipher Epithelial Responses to Influenza Virus" at Cooperative Centers on Human Immunology (CCHI) Annual Meeting, National Institutes of Allergy and Infectious Diseases (NIAID-NIH), Rockville, Maryland, United States, December 7- 8, 2023.
5. Short talk titled " Harnessing Large Language Models (LLMs) for candidate gene prioritization and selection" at Computational Sciences Retreat, The Jackson Laboratory For Genomic Medicine, Farmington, Connecticut, United States, October 3, 2023.
6. Participated in "Systems Immunology in Aging and Complex Diseases" at The Jackson Laboratory For Genomic Medicine, Farmington, Connecticut, United States, September 14-15, 2023.
7. Participated in "32nd Annual Short Course on Experimental Models of Human Cancer" at The Jackson Laboratory For Genomic Medicine, Bar Harbor, Maine, United States, August 14-22, 2023.
8. Participated in "31st Annual Short Course on Experimental Models of Human Cancer" at The Jackson Laboratory For Genomic Medicine, Farmington, Connecticut, United States, August 14-26, 2022.
9. Organized an online "Collective Omics Data" global training hands-on workshop on Covid-19 Blood Transcriptomics for student's and biomedical researchers at Sidra Medicine, Doha, Qatar. November 8, 2021. (Participation from Qatar, Brazil, India, Georgia, and Italy). ([Training Resource](#))
10. Expert lecture on "Identification of Gene Expression Diagnostic Signatures of Sepsis using Blood Transcriptome Modular Repertoire Analysis" in Sidra Research Series conducted by Research Department, Sidra Medicine, Doha, Qatar. June 15, 2021.
11. Participated in an online "Gene Literature Retrieval, Profiling, and Visualization hands-on training workshop for early career researchers" at Sidra Medicine, Doha, Qatar. January 26, 2021. ([Proof of Principle](#))
12. Expert lecture on "Sepsis GXB: an interactive collection of blood transcriptome datasets to interrogate genetic biomarkers of sepsis" in Sidra Research Series conducted by Research Department, Sidra Medicine, Doha, Qatar. June 23, 2020.
13. Organized an onsite "Collective Omics Data" hands-on training workshop on gene-centric approaches for Qatar University student's and biomedical researchers at Sidra Medicine, Doha, Qatar. September 19, 2019. ([Training Resource](#))
14. Expert lecture on "ImmPort: An Interface for Data Sharing, Analysis and Scientific Discovery in all areas of Immunological Research" in Immunology Research Series jointly conducted by Immunology Program and Research Department, Sidra Medicine, Doha, Qatar. April 16, 2019.

15. Organized an onsite "Collective Omics Data" hands-on training workshop on candidate gene investigation of Sepsis for Mahidol Oxford Tropical Medicine Research Unit (MORU) students and biomedical researchers at MORU, Bangkok, Thailand. December 3-7, 2018. ([Training Resource](#))
16. Organized an onsite "Collective Omics Data" hands-on training workshop on candidate gene investigation of Sepsis for biomedical researchers at Sidra Medicine, Doha, Qatar. July 8, 2018. ([Training Resource](#))
17. Participated in "Qatar Genome Second Symposium under the theme "Ethics, Policies, and Best Practices in Precision Medicine" conducted in collaboration with Research Department- Ministry of Public Health, Qatar And Research Center for Islamic Legislation and Ethics, Qatar at Qatar National Convention Center (QNCC) Doha, Qatar. April 29-30, 2018.
18. Expert lecture on "Gene Ontology and its Application" conducted by Department of Biotechnology, Sir MVIT, Bangalore, India. September 29, 2016.
19. Panel discussion member in "One Day Awareness Programme on "Trends and Career Opportunities in Biotechnology" conducted by Department of Biotechnology, Sir MVIT, Bangalore, India. February 13, 2016.
20. Expert lecture on "Computational Analysis of Gene Expression Data & Gene Sequencing Data" conducted by Department of Biotechnology, Sir MVIT, Bangalore, India. September, 2015.
21. Expert lecture on "Latest Trends in Bioinformatics & Its Applications" in Two Day National Level Workshop conducted by Department of Biotechnology, Adhiyamaan College of Engineering, Hosur, India. September 21-22, 2015.
22. Workshop on "Weeklong skill development program on computational genomics & in-silico proteomics" conducted by the Department of Biotechnology. Sir MVIT, Bangalore, India. 1st Week of February, 2013.
23. Workshop on "Weeklong hands-on training programme on biotechnology techniques" conducted by the Department of Biotechnology, Sir MVIT, Bangalore. January, 2013.
24. Organizing committee member for the "National Conference on Biopharmaceuticals and Healthcare" conducted by the Department of Biotechnology at Sir MVIT Campus, Bangalore, India. November 04-05, 2011.
25. Participated at "National Conference on Molecular Medicine and Nano biotechnology" jointly conducted by the Department of Biotechnology, Sir MVIT and Reva Institute at NIMHANS Convention Centre, Bangalore, India. October 13-14, 2010.
26. Participated at "National Conference on Medical Biotechnology and Clinical Research" jointly conducted by Department of Biotechnology, Sir MVIT and M.S. Ramaiah Institute of Technology, at J.N. Tata Auditorium, IISc Campus, Bangalore, India. October 02-03, 2009.