Asmi Chakraborty
Postdoctoral Associate, Barthel and Schatton Lab, PhRMA Foundation Fellow,
Department of Dermatology, Brigham and Women's Hospital
Harvard Medical School
achakraborty6@bwh.harvard.edu/ Website

EDUCATION AND PROFESSIONAL DETAILS

Postdoctoral Research Fellow 2022 – Present
Mentors: Dr. Steven Barthel and Dr. Tobias Schatton
Department of Dermatology, Brigham and Women's Hospital
Harvard Medical School, Boston, Massachusetts, USA
Project: "Role of cell-specific receptor glycosylation in immunotherapy clinical response"

Postdoctoral Associate 2019 – 2022
Mentor: Dr. Charles J. Dimitroff
Florida International University, Miami, Florida, USA
Projects: "Role of hypoxia mediated GNCT2 dependent glycosylation in melanoma immunoevasion"
"Galectin-9 dependent modulation of B cell function"

PhD in Cancer Biology 2014 – 2019
Mentor: Dr. Susan L. Bellis
University of Alabama at Birmingham, Birmingham, Alabama, USA
Thesis Title: "ST6Gal-I mediated sialylation promotes pancreatic ductal adenocarcinoma progression and chemoresistance"

Research Technician 2013 – 2014
ACTREC (Advanced Centre for Treatment Research and Education in Cancer) Navi Mumbai, India
Molecular characterization of AML (Acute Myeloid Leukemia) in Indian patient population.

Dissertation Trainee (For fulfillment of M. Tech degree) 2012 – 2013
Mentor: Dr. Champakali Ayyub
TIFR (Tata Institute of Fundamental Research), Mumbai, India
Thesis Title: "Role of Cullin-2 in starvation survival in *Drosophila melanogaster*"

M. Tech in Biotechnology (5 years integrated program) 2008 – 2013
Padmashree Dr. D.Y Patil University, Department of Biotechnology and Bioinformatics
Navi Mumbai, India

Internship
NCI Purdue 2020 summer "BigCare" workshop in large data set analysis 2021

PROFESSIONAL SERVICE

Harvard Innovation Lab	Member
Harvard Consulting Club	Associate Consultant
Careers Infinite (Startup)	Project Advisor
StartUP FIU – FIU Entrepreneurship Launch Pad (2020-2022)	Volunteer
FIU Postdoctoral Association (2020-2021)	Founding Member
FIU, Herbert Wertheim College of Medicine Research Task Force (2019-2020)	Member
FIU, Postdoctoral Advisory Council (2019-2020)	Member
Women Graduates-USA (2016-2018)	Member
Graduate Women International (2016-2018)	Member

FUNDING

The PhRMA Foundation Postdoctoral Fellowship in Translational Medicine	2021 – Present
Herbert Wertheim College of Medicine Pilot Grant	2021 – 2022
Herbert Wertheim College of Medicine Pilot Grant	2020 – 2021
Carmichael Scholarship	2018 – 2019

PATENT

Glycome Factors Driving Melanoma Progression (Serial No. 63/303,325) 2022

SCIENTIFIC SERVICE

Biomolecules (Present)	Reviewer
Journal of Immunotherapy of Cancer (Present)	Reviewer
F1000Research – Publishing group (Present)	Reviewer
Society for Glycobiology (Present)	Member
American Association of Cancer Research (Present)	Associate Member

PUBLICATIONS:

PubMed Bibliography / Google Scholar

1. **Chakraborty, A**., Perez, M., Mohammed, N. B. B., Antonopoulos, A., Ortega, L., Wells, M., Carroll, J. D., Staudinger, C., Marrero, C., Jimenez, R., Tani, Y., Wilmott, J. S., Dell, A., Thompson, J. F., Wang, W., Scolyer, R. A., Murphy, G. F., Haslam, S. M., & Dimitroff, C. J. *Hypoxia controls the glycobiological signature and related pro-tumorigenic properties of metastatic melanomas.* J. Invest. Dermatol. 2022. In press; PMID: 36174713.
2. Jones R.B., Britain C., **Chakraborty A.**, Brown J., Ballinger S., Bellis S.L., *Role of the ST6GAL1 sialyltransferase in regulating ovarian cancer metabolism*, Glycobiology, 2022. Under revision.
3. G.C, S, Tuy, K., Jones, R., **Chakraborty, A**., C, Miller., Beierle, E., Hanumanthu, V., Tran, A., Mobley, J., Bellis, S., Hjelmeland, A. *α2,6 Sialylation Mediated by ST6Gal1 Promotes Glioblastoma Growth*, J Clin Invest. 2022. Accepted
4. Perez M, **Chakraborty A**, Lau LS, Mohammed NBB, Dimitroff CJ. *Melanoma-associated glycosyltransferase GCNT2 as an emerging biomarker and therapeutic target*. Br J Dermatol. 2021 Mar 3. doi: 10.1111/bjd.19891. Epub ahead of print. PMID: 33660254.
5. **Chakraborty A**, Mohammad NBB, Bernasconi A and Dimitroff CJ, *Analysis of galectin-binding receptors on B cells.* Methods Mol Bio. 2021; in press
6. **Chakraborty A**, Staudinger C, King SL, Erickson FC, Lau LS, Bernasconi A, Luscinskas FW, Perlyn C, Dimitroff CJ. *Galectin-9 bridges human B cells to vascular endothelium while programming regulatory pathways*. J Autoimmun. 2021 Feb;117:102575. doi: 10.1016/j.jaut.2020.102575. Epub 2020 Dec 4. PMID: 33285511; PMCID: PMC7856191.
7. Britain CM, Bhalerao N, Silva AD, **Chakraborty A**, Buchsbaum DJ, Crowley MR, Crossman DK, Edwards YJK, Bellis SL. *Glycosyltransferase ST6Gal-I promotes the epithelial to mesenchymal transition in pancreatic cancer cells*. J Biol Chem. 2021 Jan-Jun;296:100034. doi: 10.1074/jbc.RA120.014126. Epub 2020 Nov 23. PMID: 33148698; PMCID: PMC7949065.
8. Alexander KL, Serrano CA, **Chakraborty A**, Nearing M, Council LN, Riquelme A, Garrido M, Bellis SL, Smythies LE, Smith PD. *Modulation of glycosyltransferase ST6Gal-I in gastric cancer-derived organoids disrupts homeostatic epithelial cell turnover*. J Biol Chem. 2020 Oct 9;295(41):14153-14163. doi: 10.1074/jbc.RA120.014887. Epub 2020 Aug 6. PMID: 32763973; PMCID: PMC7549044.
9. **Chakraborty A**, Dimitroff CJ. *Cancer immunotherapy needs to learn how to stick to its guns*. J Clin Invest. 2019 Dec 2;129(12):5089-5091. doi: 10.1172/JCI133415. PMID: 31710312; PMCID: PMC6877297.
10. Boyd NH, Walker K, Ayokanmbi A, Gordon ER, Whetsel J, Smith CM, Sanchez RG, Lubin FD, **Chakraborty A**, Tran AN, Herting C, Hambardzumyan D, Yancey Gillespie G, Hackney JR, Cooper SJ, Jiao K, Hjelmeland AB. *Chromodomain Helicase DNA-Binding Protein 7 Is Suppressed in the Perinecrotic/Ischemic Microenvironment and Is a Novel Regulator of Glioblastoma Angiogenesis*. Stem Cells. 2019 Apr;37(4):453-462. doi: 10.1002/stem.2969. Epub 2019 Jan 24. PMID: 30629778; PMCID: PMC6596424.
11. **Chakraborty A,** Dorsett KA, Trummell HQ, Yang ES, Oliver PG, Bonner JA, Buchsbaum DJ, Bellis SL. *ST6Gal-I sialyltransferase promotes chemoresistance in pancreatic ductal adenocarcinoma by abrogating gemcitabine-mediated* DNA damage. J Biol Chem. 2018 Jan 19;293(3):984-994. doi: 10.1074/jbc.M117.808584. Epub 2017 Nov 30. PMID: 29191829; PMCID: PMC5777269.
12. Schultz MJ, Holdbrooks AT, **Chakraborty A**, Grizzle WE, Landen CN, Buchsbaum DJ, Conner MG, Arend RC, Yoon KJ, Klug CA, Bullard DC, Kesterson RA, Oliver PG, O'Connor AK, Yoder BK, Bellis SL. *The Tumor-Associated Glycosyltransferase ST6Gal-I Regulates Stem Cell Transcription Factors and Confers a Cancer Stem Cell Phenotype.* Cancer Res. 2016 Jul 1;76(13):3978-88. doi: 10.1158/0008-5472.CAN-15-2834. Epub 2016 May 23. PMID: 27216178; PMCID: PMC4930726.

ORAL PRESENTATION

1. *"Galectin-9 as modulator of B cell Biology",* Whitehead Institute, MIT, August 12th , 2022, Boston, MA, USA.
2. *"Hypoxia Controls the Glycobiological Signature and Related Pro-tumorigenic Properties of Metastatic Melanomas",* Society for Glycobiology, November 8th, 2021, San Diego, CA, USA.
3. *"Role of tumor hypoxia in melanoma specific glycome alteration",* HWCOM, Florida International University, August 31st, 2021, Miami, FL, USA.

4. *"Galectin-9 as modulator of B cell Biology",* HWCOM, Florida International University, May 15th, 2020, Miami, FL, USA.
5. *"Hypoxia dependent glycosylation changes in melanoma",* HWCOM, Florida International University, August 7th, 2020.
6. *"COVID research update – Paper presentation"* HWCOM, Florida International University, April 20th, 2020. Miami, FL, USA.
7. *"Glycosyltransferase, ST6Gal-I, Drives Pancreatic Ductal Adenocarcinoma (PDAC) Progression"* Harvard Medical School – Brigham and Women's Hospital, April 15th, 2019, Boston, Massachusetts, USA.
8. *"Glycosyltransferase, ST6Gal-I, Drives Pancreatic Ductal Adenocarcinoma (PDAC) Progression"* Society for Glycobiology, November 6th, 2018, Washington, D.C, USA.
9. *"Glycosyltransferase, ST6Gal-I, Drives Pancreatic Ductal Adenocarcinoma (PDAC) Progression and Chemoresistance"* Tumor Microenvironment and Metastasis Seminar Series, UAB, September 28th, 2017, Birmingham, AL, USA.

POSTER PRESENTATIONS

1. **Asmi Chakraborty**, Mariana Perez, Norhan B. B. Mohammed, Liettel Ortega, Michael Wells, James S. Wilmott, John F. Thompson, Stuart M. Haslam, Wei Wang, Richard A. Scolyer, George F. Murphy and Charles J. Dimitroff, *"Hypoxia Controls the Glycobiological Signature and Related Pro-tumorigenic Properties of Metastatic Melanomas"* Society for Glycobiology, November 8th, 2021, San Diego, CA, USA.
2. **Asmi Chakraborty**, Mariana Perez, Norhan B. B. Mohammed, Liettel Ortega, Michael Wells, James S. Wilmott, John F. Thompson, Stuart M. Haslam, Wei Wang, Richard A. Scolyer, George F. Murphy and Charles J. Dimitroff, *"GCNT2 suppression in metastatic melanoma is potentiated by hypoxia and leads to aggressive disease progression."* AACR Annual Meeting, April 2021, virtual.
3. **Asmi Chakraborty**, Norhan B. B. Mohammed, Frances Clemente Erickson, Michael Wells, James S. Wilmott, John F. Thompson, Stuart M. Haslam, Wei Wang, Richard A. Scolyer, George F. Murphy and Charles J. Dimitroff, *"GCNT2 suppression in metastatic melanoma is potentiated by hypoxia and leads to aggressive disease progression."* Society for Glycobiology, November 2020, virtual.
4. **Asmi Chakraborty**, Robert B. Jones, Christopher A. Klug, Lesley E. Smythies and Susan Bellis, "*Glycosyltransferase ST6Gal-I promotes pancreatic ductal adenocarcinoma progression and metastasis."*, Gordon Conference, March 2019, Lucca, Barga, Italy.
5. **Asmi Chakraborty**, Robert B. Jones, Christopher A. Klug, Lesley E. Smythies and Susan Bellis, "*Glycosyltransferase ST6Gal-I promotes pancreatic ductal adenocarcinoma progression and metastasis."*, Society for Glycobiology, November 6th, 2018, New Orleans, LA, USA.
6. **Asmi Chakraborty**, Robert B. Jones, Christopher A. Klug, Lesley E. Smythies and Susan Bellis, "*Glycosyltransferase ST6Gal-I promotes pancreatic ductal adenocarcinoma progression and metastasis."*, AACR Annual Meeting, April 2018, Chicago, IL, USA.
7. **Asmi Chakraborty**, Matthew Schultz, Hoa Quang Trummell, James Bonner and Susan Bellis, "*Glycosyltransferase ST6Gal-I protects against chemotherapy-induced DNA damage and promotes PDAC progression in vivo."*, Comprehensive Cancer Center Annual Research Retreat, October 2017. Birmingham, AL, USA.
8. **Asmi Chakraborty**, Matthew Schultz, Hoa Quang Trummell, James Bonner and Susan Bellis, "*Glycosyltransferase ST6Gal-I protects against chemotherapy-induced DNA damage and promotes PDAC progression in vivo."*, UAB CDIB Retreat, September 2017. Birmingham, AL, USA.
9. **Asmi Chakraborty**, Matthew Schultz, Hoa Quang Trummell, James Bonner and Susan Bellis, "*Glycosyltransferase ST6Gal-I protects against chemotherapy-induced DNA damage and promotes PDAC progression in vivo."*, UAB GBSO Symposium, August 2017, Birmingham, AL, USA.
10. **Asmi Chakraborty**, Matthew Schultz, Hoa Quang Trummell, James Bonner and Susan Bellis, "*Glycosyltransferase ST6Gal-I protects against chemotherapy induced DNA damage and subsequent apoptosis in pancreatic adenocarcinoma cells.",* UAB Comprehensive Cancer Center Annual Research Retreat, October 2016, Birmingham, AL, USA.
11. **Asmi Chakraborty**, Matthew Schultz, Hoa Quang Trummell, James Bonner and Susan Bellis, "*Glycosyltransferase ST6Gal-I protects against chemotherapy induced DNA damage and subsequent apoptosis in pancreatic adenocarcinoma cells.",* NIH Glycoscience Day, June 2016, Washington, D.C, USA

12. **Asmi Chakraborty**, Matthew Schultz, Hoa Quang Trummell, James Bonner and Susan Bellis, "*Glycosyltransferase ST6Gal-I protects against chemotherapy induced DNA damage and subsequent apoptosis in pancreatic adenocarcinoma cells.",* AACR Annual Meeting, May 2016, New Orleans, LA, USA.
13. **Asmi Chakraborty**, Matthew Schultz and Susan Bellis, *"ST6Gal-I promotes chemoresistance in pancreatic adenocarcinoma by reducing DNA damage and dampening drug metabolism"*, CDIB 2015 Retreat, September 18th, 2015, Birmingham, AL, USA.

AWARDS

Society for Glycobiology Travel Award	2021 & 2018
Gordon Conference Poster Award	2019
The John R. Durant Award for Excellence in Cancer Research	2018 & 2017
Bertram M. Marx Travel Award	2016 & 2018
Scientific poster award NIH Glycoscience Day	2016
Graduate Student Government Travel Award	2016

MENTORING

1. Jordan Carroll	Research Assistant, FIU
2. Dr. Zia Imtiaz	Resident, Mt. Sinai
3. Liettel Ortega	Research Specialist, FIU
4. Mariana Perez	Medical Student, FIU
5. Lee Seng Lau	Ph.D. Student, FIU
6. Norhan Mohammed	Ph.D. Student, FIU
7. Sajina GC	Ph.D. Student, UAB
8. Katherine Ankenbauer	Ph.D. Student, UAB
9. Brian F. Kirkwood	Medical Student, UAB
10. Nikita U. Bhalerao	Ph.D. Student, UAB
11. Tshering Lama Sherpa	Ph.D. Student, UAB
12. Julia Powelson	Medical Student, UAB
13. Andrew Schroeder	Medical Student, UAB

TEACHING AND OUTREACH

Graduate Microbiology and Immunology – Teaching assistant	2020
Women in STEM student mentor	2017 – 2019
Judge: 10th Annual UAB Undergraduate Spring Expo	April 14, 2017
UAB Arts in Medicine – Volunteer	2017 – 2019
Undergraduate workshop – Graduate Student Volunteer	2016
UAB Cancer Biology Theme Admissions Committee - Student Member	2016 – 2019
Graduate Biomedical Student Outreach (GBSO) Student Support Liaison	2016 – 2019
Teach India, Volunteer Teacher	2013