

## Matthew S. Chang

Email: [msc148@case.edu](mailto:msc148@case.edu)

Phone: 808.383.5598

### A) Education

2021-2025      **BA in Chemistry and Computer Science, GPA: 3.95/4.00**  
**Minor in Mathematics**  
**Case Western Reserve University**, Cleveland, OH  
**Research Advisor:** Berkley E. Gryder, PhD

### B) Honors and Awards

2024      Royal Society of Chemistry Certificate of Excellence for merit in organic chemistry, CWRU  
2024      W.R. Veazey Prize for merit in physical chemistry, CWRU  
2023, 2024      Cancer-focused Summer Undergraduate Research (CanSUR)  
2021-2025      University Scholarship, CWRU

### C) Research Experience

2022-present      **Undergraduate Researcher**, Case Western Reserve University School of Medicine, Cleveland, OH

- Explored transcriptional effects of a new CBP/p300 inhibitor (IHK-44) in rhabdomyosarcoma via RNA-seq and ChIP-seq. Evaluated H2B as a marker for enhancer addiction via histone extraction, Western blot, cell proliferation assay, and ChIP-seq.
- Screened PROTACs in osteosarcoma and rhabdomyosarcoma via luciferase assay, cell proliferation assay, and Western blot.
- Identified solubility parameters that caused the androgen receptor (AR) to separate out in the presence of a new AR antagonist (BG-15a) in prostate cancer via Western blot and co-IP. Compared acetylation levels of AR antagonists at AR binding sites via HiChIP.

### D) Bibliography

#### a) Manuscripts in preparation

1. Khan M.I.\*, **Chang M.S.\***, Kelly J.L., Udhayakumar B., Gryder B.E. "Selective inhibition of CBP/p300 in rhabdomyosarcoma reveals H2B as a marker for enhancer addiction." To be submitted to Nature Chemical Biology.

#### b) Peer-Reviewed Publications

1. Kohrt S.E., Novak E.J., Tapadar S., Wu B., Strobe J., Asante Y., Kim H., **Chang M.S.**, Gurdak D., Khalil A., Rood M., Raftery E., Stavreva D., Nguyen H.M., Brown L.G., Ramser M., Peer C., Meyers W.M., Aborenden N., Chakravortee M., Sallari R., Nelson P.S., Kelly K.K., Graham T.G.W., Darzacq X., Figg W.D., Oyelere A.K., Corey E., Adelaiye-Ogala R.,

Gryder B.E. "Small-molecule disruption of androgen receptor-dependent chromatin clusters." *Proc Natl Acad Sci U.S.A.* **2024**, 121(48), e2406239121.

### c) Oral Presentations

1. **Chang M.S.**, Khan M.I., Gryder B.E. "Chemical inhibition of HATs reveals transcriptional dependencies in fusion-positive rhabdomyosarcoma." CanSUR Scholar Symposium, Case Comprehensive Cancer Center, Cleveland, OH, August 2024.
2. **Chang M.S.**, Novak E.J., Kohrt S.K., Gryder B.E. "Utilizing solubility differences to separate out the androgen receptor in prostate cancer." CanSUR Scholar Symposium, Case Comprehensive Cancer Center, Cleveland, OH, August 2023.

### d) Poster Presentations

1. **Chang M.S.**, Khan M.I., Gryder B.E. "Chemical inhibition of HATs reveals transcriptional dependencies in fusion-positive rhabdomyosarcoma." Intersections, Case Western Reserve University, Cleveland, OH, August 2024.
2. **Chang M.S.**, Udhayakumar B., Asante Y., Gryder B.E. "Identification of master transcription factor candidates in pan-rhabdomyosarcoma." Intersections, Case Western Reserve University, Cleveland, OH, April 2024.
3. **Chang M.S.**, Kohrt S.E., Novak E.J., Gryder B.E. "Utilizing solubility differences to separate out the androgen receptor in prostate cancer." Intersections, Case Western Reserve University, Cleveland, OH, December 2023.

## E) Teaching

MATH 122: Calculus for  
Science and Engineering II

**Supplemental Instructor**, Case Western Reserve  
University, Cleveland, OH

- Fall 2022, Spring 2023, Fall 2023, Spring 2024, Fall 2024, Spring 2025
- Responsible for a team of 14. Led weekly recitations for 30+ undergraduate students. Designed, proctored, and graded quizzes and exams. Held office hours.

## F) Mentoring

2025	Abbey Murcek (CWRU)	currently an undergraduate student at CWRU
2025	Carrietta Farma-Hai (CWRU)	currently an undergraduate student at CWRU
2024-2025	Maya Al-Haddad (CWRU)	currently an undergraduate student at CWRU
2024-2025	Jordyn Kelly (CWRU)	currently an undergraduate student at CWRU

## **G) Technical Skills and Coursework**

**Wet lab:** cell culture, Western blot, protein extractions, co-IP, cell proliferation assay, luciferase assay, qPCR, RNA-seq, ChIP-seq

**Synthetic lab:** HPLC, GC-MS, UV-vis

**Programming Languages:** R, bash, Python, Java

**Software:** GraphPad Prism, IGV, GSEA, Adobe Illustrator

**Relevant Coursework:** organic chemistry, analytical chemistry, physical chemistry, biochemistry, genetics, biophysics, data structures, algorithms, machine learning, artificial intelligence

## **H) References**

Berkley E. Gryder, PhD

Assistant Professor, Department of Genetics and Genome Sciences, School of Medicine,  
Case Western Reserve University

Email: [beg33@case.edu](mailto:beg33@case.edu)

Phone: 216.368.8749

Fu-Sen Liang, PhD

Professor, Department of Chemistry, Case Western Reserve University

Email: [fxl240@case.edu](mailto:fxl240@case.edu)

Phone: 216.368.3696

Matthew Bertin, PhD

Gilles and Malvina Klopman Assistant Professor of Chemistry, Department of Chemistry,  
Case Western Reserve University

Email: [mxb1224@case.edu](mailto:mxb1224@case.edu)

Phone: 216.368.0602