# Michigan State University CURRICULUM VITAE

Name: Bin Chen, Ph.D.

**Position:** Associate Professor

Pediatrics/Pharmacology and Toxicology/Medicine/Computer Science and

Engineering/Epidemiology and Biostatistics

Michigan State University

Address: Grand Rapids Research Center, Room 5017

400 Monroe NW

Grand Rapids, MI 49503 Michigan State University

Email: chenbi12@msu.edu or binchenindiana@gmail.com

#### **Summary**

I am a tenured associate professor leading a multidisciplinary lab, with a mission to leverage advanced machine learning and emerging big data to discover new therapeutics. I am also the Founding Director of the Center for Al-Enabled Drug Discovery in the College of Human Medicine at MSU. My current research areas include machine learning method development, integrative bioinformatics, and EHR mining. I have training in informatics, chemistry, and biology, and working experience in big pharmaceutical companies and small startups. As a corresponding author, I have published in many high-profile journals such as Cell, Nature Protocols, Nature Reviews Gastroenterology & Hepatology, Nature Communications, Cell Systems, Genomics, Proteomics & Bioinformatics, and Briefings in Bioinformatics. As a Pl/co-Pl, I have received a K01 career training award, multiple R01-level NIH grants, industry-sponsored grants, and foundation grants, totaling over \$7 million. I have served as a mentor/co-mentor for two K99 training grants and have mentored four trainees who have gone on to become Pls. In the next few years, I aim to pioneer transcriptomics-based drug discovery, develop foundational models to understand how individual cells respond to perturbations, and utilize massive real-world data to assess drug efficacy.

#### **EDUCATION**

2000 - 2004	Chongqing University	B.A.	Chemistry
2007 - 2009	Indiana University, Bloomington	M.S.	Chemical Informatics (Mentor: Dr. David Wild)
2009 - 2012	Indiana University, Bloomington	Ph.D.	Informatics (Mentor: Dr. David Wild)
2012 - 2015	Stanford University	Postdoc	Translational Bioinformatics (Mentor: Dr. Atul Butte)

PRINCIPAL PO	SITIONS HELD			
2015 - 2017	University of California, San Francisco	Instructor	Pediatrics/Institu Sciences	te for Computational Health
2017 - 2018	University of California, San Francisco	Assistant Professor (Non-tenure)	Sciences	te for Computational Health
2018 - 2022	Michigan State University	Assistant Professor (Tenure-trac k)	Pediatrics/Pharm	nacology and Toxicology
2021 - 2022	Michigan State University	Assistant Professor	Computer Science	ce and Engineering
2022 - Present	Michigan State University	Associate Professor (With tenure)	Science and Eng	macology and cine (adjunct)/Computer gineering (adjunct) nd Biostatistics (adjunct)
2025 - Present	Michigan State University	Founding Director	Center for Al-En	abled Drug Discovery
OTHER POSIT	IONS HELD			
2004 - 2017	Shanghai Institute of Organic Chemistry, Chinese Research Academy of Sciences Assistant			
2008 Summer	Novartis			Intern
2009 Summer	Pfizer			Intern
2010 Summer	Pfizer			Intern
2011 Summer	Merck			Intern
2012	Novartis			Contractor
2015 - 2016	Numedii			Consultant
2021 - 2022	Katana Graph			Consultant
HONORS AND	AWARDS			
2009	Symyx Ph.D. Fello	owship		Indiana University at Bloomington
2010	CINF Scholarship	for Scientific E	ACS Chemical Information Division	
2012	Lucille Wert Schol	arship		ACS Chemical Information Division
2014	Jason Morrow Tra	inee Award		ASCPT
2014	Presidential Traine	ee Award		ASCPT
2015	Presidential Poste	er of Distinction	1	The Liver Meeting

2015	Intel Science Talent Search (Intel STS) Research Teacher	
2016	LINCS Meeting Travel Fellowship	
2017	BD2K K01 Award	NIH
2018	BD2K Single Cell Workshop Travel Award	NIH
2019	NIEHS Extramural Paper of the Month	NIEHS
2021	Early Career Research Excellence Award	CHM MSU
2022	20 <sup>th</sup> Annual Great Lakes Pediatric Research Day Expert Panelist	
2022	APASL Distinguished Speaker	

# **KEYWORDS/AREAS OF INTEREST**

Transcriptomics-based Drug Discovery, EHR Mining for Drug Discovery, Al-Enabled Drug Discovery

# **MEMBERSHIPS**

2008 - 2012	American Chemical Society
2012 - Present	American Medical Informatics Association
2017 - 2018	Associate Member, UCSF Cancer Center
2012 - Present	International Society for Computational Biology
2020 - Present	American Association for Cancer Research

SERVICE TO S	CHOOL AND COLLEGE
2018	Bioinformatics Faculty Search Committee (TSMM)
2018	GII Precision Medicine Faculty Search Committee
2018 - Present	CHM MMI Interviewer (Participated four times, one day every time)
2019 - Present	Student Competence Committee (Appointed by the Dean) Three whole mornings every semester for meetings
2019 - Present	BMS Student Candidate Interviewer
2020	Chair, Big Data Research Faculty Search Committee
2021	Two MSU-HFHS Partnership Working Groups Each workgroup meets weekly for two months
2021	MSU CHM IT Committee
2021 - 2023	Pharmacology Master's Program Mentor
2021 - 2022	BMS Inclusive Initiative Mentor
2022 - Present	Chair Search Committee (Department of Physiology)
2022	MSU SPG Grant Reviewer
2023	Pediatrics Precision Medicine Faculty Search Committee
2023	MSU/MTU Annual Symposium Organizing Committee and Session Moderator

2023	MSU Precision Health Annual Symposium Organizing Committee and Session Moderator
2023 - Present	CHM Faculty Honorifics Committee
2023 - Present	MSU BioMolecular Science Gateway (BMS) Admission Committee
2023 - Present	MSU CHM Tenure System Mentoring Program (Mentor two junior faculty)
2023	Department RPT Ad Hoc Member
2024 - Present	Department RPT Committee
2024 - Present	MSU CHM Faculty Search Committee

# **SERVICE TO PROFESSIONAL ORGANIZATIONS**

<b>U U</b> .	====::	
2016	The Fourteenth Asia Pacific Bioinformatics Conference	Organizing Committee
2017	DahShu Data Science Symposium: Computational Precision Health	Organizing Committee Co-Chair and Session Chair
2017	Fanconi Anemia Research Fund	Grant Reviewer
2017	Ohio Cancer Research	Grant Reviewer
2017	AMIA 2018 Informatics Summit	Program Committee
2018	Alzheimer's Research UK	Grant Reviewer
2018	Cancer Research UK	Grant Reviewer
2019	Worldwide Cancer Research	Grant Reviewer
2020	Spectrum Health PRF Review	Grant Reviewer
2020 - Present	Journal of Cheminformatics	Editorial Board
2020	CCNY-MSKCC Partnership	Grant Reviewer
2020	Big Ten CRC Correlatives	Committee Member
2022	CCNY-MSKCC Partnership	Grant Reviewer
2022	French National Cancer Institute	Grant Reviewer
2022 - Present	ICIBM	Program Committee
2022	AMIA Summer Summit	Session Chair
2023 Spring/Summer	NIH BDMA Study Section	Grant Reviewer
2023	NIH NCATS CTSA RC2 Study Section	Grant Reviewer
2023	NIH NCATS R21 Rare Disease Study Section	Grant Reviewer
2023	NIH MCST-M Study Section	Grant Reviewer
2023	NIH NIDDK Catalyst Award (DP1)	Grant Reviewer
2024	DahShu Data Science Symposium	Chair
2024	NIH NCATS CTSA RC2 Study Section	Grant Reviewer
2024	ICIBM	Session Chair and PC
2024	NIH Director's Early Independence Awards	Grant Reviewer

2025	Harvard Medical School	Grant Reviewer	
2025	NIH BDMA Study Section	Grant Reviewer	
2025	Worldwide Cancer Research	Grant Reviewer	
2025 - 2029	NIH BDMA Study Section	Standing Member	
SERVICE TO PROFESSIONAL PUBLICATIONS			
2010 - 2015 Program Committee for STIIC 2010, BIOKDD 2011, STIIC 2011, ESWC 2011, WebS 2012, STIIC 2012, IBICA 2012, MDS 2012, WebS 2013, MDS 2013, CIKM2013, JIST 2013			
2009 - 2015	Ad Hoc Referee for Scientific Reports, Drug Di	iscovery Today Briefings in	

- 2009 2015

  Ad Hoc Referee for Scientific Reports, Drug Discovery Today, Briefings in Bioinformatics, Bioinformatics (Oxford), BMC Bioinformatics, BMC Medical Genomics, Journal of the American Medical Informatics Association, Journal of Chemical Information and Modeling, Journal of Cheminformatics, IEEE Intelligent Systems, Journal of Information Science, Knowledge and Information Systems, Social Network Analysis and Mining, Journal of Biomedical Semantics, Computers in Biology and Medicine, OMICS: A Journal of Integrative Biology, IEEE/ACM Transactions on Computational Biology and Bioinformatics, IEEE Computational Intelligence Magazine, Oxidative Medicine and Cellular Longevity, AMIA Annual Conference
- 2015 Present Ad Hoc Referee for Nature Communications, Nature Chemical Biology, Advanced Science, Cell Chemical Biology, Genome Medicine, Briefings in Bioinformatics, Journal of the American Medical Informatics Association, BMC Bioinformatics, Bioinformatics (Oxford), BMC Cancer, PLOS Computational Biology, Scientific Data
- 2018 Present Guest editor for PLOS Comp Biol
- 2020 Present Ad hoc referee for Molecular Systems Biology, Nature Review Chemistry, Nature Machine Intelligence
- 2021 Present Ad hoc referee for Lancet Digital Health, British Journal of Cancer, Cell Reports Medicine, EBioMedicine, Gut, Cancer Research, KDD, Alzheimer's & Dementia Research

#### PRESENTATIONS - INTERNATIONAL

- 2014 8th International Conference on Systems Biology and 4th Translational Bioinformatics Conference, Qingdao, China (Podium)
- 2017 Global Pharma R&D Informatics Congress 2017, Lisbon, Portugal (Podium)
- 2018 Inaugural Immunology and Immunometabolism Conference, Chongqing, China (Podium)
- 2018 Chongqing University, Chongqing, China (Podium)
- 2018 Army Medical University, Chongging, China (Podium)
- 2018 JSM Annual Meeting, Vancouver, Canada (Podium)
- 2019 Fudan University, Shanghai, China (Podium)
- 2019 Suzhou University, Jiangsu, China (Podium)

2020	Department of Pharmacology Annual Symposium at the University of Toronto (Keynote, canceled due to COVID-19)
2021	Multi-omics Seminar by Front Line Genomics (Virtua Talk)
2022	APASL STC on HCC, Taiwan (Virtual Talk)
2022	15th Annual Meeting of the Korean Society of Medical Oncology & 2022 International Conference, Seoul, Korea (Podium)
2023	ICSA 2023 China Conference, Chengdu, China (Podium)
2023	1st AHMU International Conference on RNA Biology and Immunology, China (Virtual Talk)
2025	Ontario Institute for Cancer Research, Toronto, Canada (Talk)
2025	PharmKDD Workshop, Toronto, Canada (Talk)
PRESE	NTATIONS - NATIONAL
2010	239th ACS National Meeting, San Francisco, CA (Podium and Poster)
2011	Inaugural Conference of the International Chemical Biology Society, Kansas City, MO (Poster)
2012	Conference on Semantics in Healthcare and Life Sciences, Cambridge, MA (Podium and Poster)
2012	Bio-IT World, Boston, MA (Poster)
2013	LINCS Symposium, Boston, MA (Poster)
2013	American Association of Pharmaceutical Scientists Annual Meeting, San Antonio, TX (Podium)
2014	American Society for Clinical Pharmacology and Therapeutics Annual Meeting, Atlanta, GA (Podium and Poster)
2014	AMIA Translational Bioinformatics, San Francisco, CA (Poster)
2014	5th Annual Mechanistic Studies in Transplantation Workshop, Atlanta, GA (Podium)
2015	The Liver Meeting, San Francisco, CA (Poster)
2016	Digestive Disease Week, San Diego, CA (Podium)
2017	Big Data For Breast Cancer\West Coast Conference, Susan G. Komen, Palo Alto, CA (Invited Meeting)
2017	I-SPY2+ Retreat, St Helena, CA (Invited Meeting)
2017	University of Arizona, Tulsa, AZ (Invited Talk)
2017	University of Pennsylvania, Philadelphia, PA (Invited Talk)
2017	Michigan State University, East Lansing, MI (Invited Talk)
2018	PSB, Big Island, HI (Poster)
2018	AACR Annual Meeting, Chicago, IL (Poster)
2018	2018 Data Science Innovation Lab: Mathematical Challenges of Single Cell Dynamics, Bend, OR (Invited One-Week Workshop)
2018	ICSA Applied Statistics Symposium, New Brunswick, NJ (Invited Talk)

2018 ICIBM, Los Angeles, CA (Invited Talk) PSB, Big Island, HI (Poster) 2019 2019 ICIBM, Columbus, OH (Invited Workshop) 2019 JSM, Denver, CO (Invited Panel) 2019 Childhood Cancer Data Initiative, Washington, DC (Workshop) 2019 Moving Targets, USC, Los Angeles, CA (Invited Talk) 2020 4th Translational Genomics and Epigenomics Symposium, Buffalo, NY (Podium, Canceled due to COVID-19) 2020 AMIA Annual Meeting Workshop (Podium, Canceled due to COVID-19) 2020 Invited Seminar in Cancer Biology, The University of Toledo, OH (Virtual Talk) 2020 Mount Sinai MSCIC: Work in Progress (Virtual Talk) 2021 Sino-American Pharmaceutical Professionals Association (SAPA) Scientific Symposium (Virtual Talk) 2022 AMIA Summit, Chicago, IL (Podium) 2022 The Tri-Omics Summit, Boston, MA (Invited Talk) 2022 Boston Children's Hospital, Harvard Medical School, MA (Invited Talk) 2023 Vanderbilt University (Virtual Talk) 2023 ICSA Annual Conference, Ann Arbor, MI (Invited Talk) 2024 ATTIS '24 symposium at University of Alabama at Birmingham, AL (Invited Talk) 2024 University of Pennsylvania, PA (Invited Talk) 2024 ICIBM, Houston, TX (Invited Talk) 2024 University of Austin, Tx (Invited Talk) 2025 University of Chicago, IL (Invited Talk) 2025 Cold Spring Harbor Laboratory, Cancer Genetics: History and Consequences Meeting, NY (Poster) 2025 Stat4Onc, Stanford, CA (Invited Talk) 2025 ICIBM, Columbus, OH (Invited Talk) PRESENTATIONS - REGIONAL AND OTHER INVITED PRESENTATIONS Pfizer Inc., Boston, MA (Podium) 2010 2011 Lecture for S604, Indiana University at Bloomington, IN (Lecture) 2011 Merck Inc., Rahway, NJ (Podium) 2011 Lecture for S636, Indiana University at Bloomington, IN (Lecture) 2011 Mayo Clinic, Rochester, MN (Podium) 2012 Novartis, Boston, MA (Podium) 2015 UCSF Precision Medicine Conference, UCSF, San Francisco, CA (Podium) 2016 Stanford VA Hospital, Palo Alto, CA (Podium)

- 2017 UCSF Chinese Association Seminar, San Francisco, CA (Podium)
- 2017 UCSF PSPG 245B Course, UCSF, San Francisco, CA (Lecture & Workshop)
- 2017 UC Berkeley, Department of Statistics, Berkeley, CA (Podium)
- 2017 UCSF ISPY Biomarker Monthly Workshop, San Francisco, CA (Workshop)
- 2017 UCSF Cancer Showcase, San Francisco, CA (Podium)
- 2017 UCSF Brain Cancer Seminar, San Francisco, CA (Podium)
- 2017 DahShu Virtual Club and SFASA Monthly Seminar, San Francisco, CA (Podium)
- 2017 UCSF Hepatobiliary Cancers Research Symposium, San Francisco, CA (Podium)
- 2018 UCSF BP205B, San Francisco, CA (Lecture)
- 2018 Chinese American Biopharmaceutical Society Big Data Workshop, Genentech, South San Francisco, CA (podium)
- 2018 UCSF Breast Cancer Retreat, San Francisco, CA (Podium)
- 2018 MSU Pediatric Research Rounds, East Lansing, MI (Podium)
- 2018 Big Data Ignite, Grand Rapids, MI (Podium)
- 2018 MSU Drug Discovery Seminar, East Lansing, MI (Podium)
- 2018 Pediatric Grand Rounds at Helen DeVos Children's Hospital, Grand Rapids, MI (Podium)
- 2019 MSU Translational Science Seminar, East Lansing, MI (Podium)
- 2019 COCOH 2019, Grand Rapids, MI (Podium)
- 2019 MSU IQ Seminar, East Lansing, MI (Podium)
- 2019 MSU EPI Seminar, East Lansing, MI (Podium)
- 2019 VARI Cancer Center Seminar, Grand Rapids, MI (Podium)
- 2019 MSU Pediatric Research Retreat, Grand Rapids, MI (Podium)
- 2019 MSU Machine Learning Seminar, East Lansing, MI (Podium)
- 2020 MSU COM Course Lecture, MI (Lecture)
- 2020 MSU Translational Bioinformatics Workshop, MI (Lecture and Organizer)
- 2020 MSU Department of Physiology Seminar (Virtual Talk)
- 2021 CHM Town Hall Panelist (Virtua Talkl)
- 2021 MSU Precision Oncology Symposium, MI (Podium)
- 2021 Henry Ford Health Michigan State University Joint Oncology Symposium, MI (Podium)
- 2022 Great Lake Pediatric Research Day, MI (Al Panelist)
- 2022 Henry Ford Grand Rounds, MI (Podium)
- 2023 MSU Drug Discovery Seminar/Cancer Research Seminar, MI (Podium)
- 2023 MSU GGS Program Seminar, MI (Podium)
- 2024 MSU CSE Faculty Department Meeting, MI (Podium)
- 2024 Peds Cross Campus Retreat Al Panel, MI (Podium)

2025 Rare Disease Day, MI (Panelist)

2025 HFH+MSU Innovation Symposium, MI (Podium)

2025 MSU CMSE 10th Anniversary Conference, MI (Panelist)

#### **SERVICE ACTIVITIES SUMMARY**

In 2015, I co-founded DahShu (http://dahshu.org/) with a few faculty members from UC Berkeley and Stanford University, along with several senior executives in biotech. DahShu is a non-profit organization dedicated to promoting research and education in data science. We have successfully organized three data science conferences, attracting hundreds of researchers worldwide. As a core member, I lead activities including fundraising, marketing, and conference organizing, and help it grow into a community of 6000 global members. Since 2017, we have organized monthly virtual seminars. I chaired the DahShu Data Science Symposium at MSU in May 2024 (https://dahshu.wildapricot.org/dahshu24home).

#### **COMMUNITY AND PUBLIC SERVICE**

2013 - 2014	Board Member, Postdoc Department, Association of Chinese Students and
	Scholars at Stanford

2015 - Present General Secretary & Co-founder, DahShu

2019 - 2023 Organizer of Grand Rapids/East Lansing Computational Biology Forum

(Formerly Big Data Journal Club before 2020)

# **TEACHING**

2024

2017	UCSF Systems Pharmacology PSPG 245B, Guest Lecturer
2018	UCSF Systems Pharmacology PSPG 245B, Guest Lecturer
2018	Computational Drug Discovery Workshop (One evening) to Medical Students at MSU
2019	MSU Translational Bioinformatics One-week Workshop, Organizer and Lecturer
2020	MSU COM Biomedical Research Structure and Methods Course, Guest lecturer
2021	MSU Drug Discovery Course PHM809/CEM809/BMB961, Lecturer
2021	T32 Drug Discovery Big Data Boot Camp (One week), Lecturer
2021	Precision Decision-Making in Agriculture and Biomedicine GEN 800, Lecturer
2021 - Present	PHM 801-Fundamental Principles of Pharmacology & Toxicology: Translational Bioinformatics, Lecturer
2024 - Present	PHM802-Cellular, Molecular and Integrated Systems Pharmacology: Big Data, Lecturer

T32 Drug Discovery Big Data Boot Camp (One week), Lecturer

TRAINEES/FACULTY SUPERVISED OR MENTORED (Bold means ongoing training)

				Id means ongoing training)
Dates	Name	Program or School	Mentor Type	Position After Training
2014	Charles Pei	Stanford SMIR High School Program	Project Mentor	Undergraduate at Harvard
2014	Rachel Wu	Stanford SMIR High School Program	Project Mentor	Undergraduate at MIT
UCSF				
2015	Jane Wei	UCSF Undergraduate Intern	Project Mentor	Undergraduate at Cornell University
2016	Tanisha Joshi	UCSF High School Intern	Project Mentor	Evergreen Valley High School
2016	Michael Sharpnack	UCSF Medical Student Volunteer	Project Mentor	Graduate Student at Ohio State University
2016	Jordan Spatz	UCSF Medical Student	Project Mentor	Graduate Student at UCSF
2017	Reuben Sarwal	UCSF Undergraduate Intern	Project Mentor	UC Berkeley Undergraduate
2017 - 2019	Billy Zeng	UCSF Medical Student/MSU Intern	Project Mentor	Medical Student at UCSF
2017 - 2018	Yuying Chen	UCSF Undergraduate Volunteer	Project Mentor	UCSF ISPY Program Intern
2017 - 2017	Alex Jin	UCSF High School Volunteer	Project Mentor	Portledge High School, NYU
MSU				
2018 - 2022	Ke Liu	Postdoc and then Research Assistant Professor	Mentor	Professor at Shandong University in China (Qilu Young Scholar)
2018 Summer	Tom Hu	Graduate intern	Project Mentor	UC Berkeley Undergraduate
2018 - Present	Rama Shankar	Postdoc Scholar (K99 Awardee)	Mentor	

Dates	Name	Program or School	Mentor Type	Position After Training
2018-2019	Patrick Newbury	Postdoc Scholar	Mentor	Radiation Oncology Resident at University of Oklahoma
2018	Anthony Sciarini	Undergraduate Intern	Mentor	GVSU Undergraduate
2018	Keith Schmitt	Undergraduate Intern	Mentor	GVSU undergraduate
2018 - Present	Shreya Paithankar	Graduate Intern then Lab Assistant	Mentor	
2018 Summer	Anita Wen	Graduate Intern	Mentor	UC Davis Graduate
2018 - 2022	Jing Xing	Postdoc Scholar	Mentor	PI at Chinese Academy of Sciences
2018	Omar Kana	Graduate Rotation Student	Mentor	MSU BMS Graduate
2018	Kasim Fassia	MSU Medical Student	Project Mentor	MSU/CHM Medical Student
2018	Albert Jiao	MSU Medical Student	Project Mentor	MSU/CHM Medical Student
2019 - 2020	Rae Felismino	MSU Medical Student	Project Mentor	MSU/COM Medical Student
2019 - 2020	Krista Young	MSU Medical Student	Project Mentor	MSU/COM Medical Student
2019 - 2020	Cathy Lee	MSU Medical Student	Project Mentor	MSU/COM Medical Student t
2019 - 2021	Christopher Chang	MSU Medical Student	Project Mentor	MSU/COM Medical Student
2019 - 2022	Mengying Sun	CS PhD Student(Co-sup ervised by Jiayu Zhou)	Mentor	Data Scientist at Meta
2019 Summer	Suchir Gupta	High School Intern	Mentor	Central High School (Later admitted to University of Michigan)
2019	Yingying Wu	Postdoc Scholar	Mentor	Postdoc Scholar at Harvard

Dates	Name	Program or School	Mentor Type	Position After Training
2019 - 2021	Shan-Ju Yeh	PhD Visiting Student	Mentor	PhD Student and then Assistant Professor at Taiwan National Tsinghua University
2019 - 2021	Eugene Chekalin	Postdoc Scholar	Mentor	Senior Computational Biologist at Illumina
2020	Austin Vanvelsen	Medical Student	Mentor	MSU/CHM Medical Student
2020	Tyler Vanvelsen	Medical Student	Mentor	MSU/CHM Medical Student
2020 Summer	Xiangyu Chen	High School Intern	Mentor	East Grand Rapids High School (Later admitted to UPenn)
2020 - 2022	Jeremy Haskins	Part-time Lab Assistant	Supervisor	Altay Therapeutics
2020	Gregory Burns	F32 Postdoc Fellow in Asgerally Fazleabas Lab	Co-sponsor	Postdoc at MSU
2020 - Present	Dimitri Joseph	DO/PHD Student	Mentor	
2020 - Present	Ruoqiao Chen	BMS PhD Student	Mentor	
2021 Summer	Jeanne Yang	Undergraduate Intern	Mentor	UM Undergraduate
2021	Jacob Zieba	BMS Rotation Student	Mentor	BMS Student
2021 - 2024	Han Meng	CS MS Student	Mentor	William & Mary PhD Graduate
2022 - Present	Dmitry Leshchiner	Postdoc Scholar	Mentor	
2022 - Present	Xiaodan Zhang	Data Science Specialist	Supervisor	
2022 - 2023	Yanzeng (Alex) Li	Biostatistics PhD Student	Mentor	MSU Biostats Graduate
2022 - Present	Nabasmita Talukdar	Biostatistics PhD Student	Mentor	
2022 - Present	Peter Huang	GGS PhD Student	Thesis Committee	

Dates	Name	Program or School	Mentor Type	Position After Training
2022	Yajing Ji	Resident at Corewell Health	Project Mentor	Corewell Health
2022 Summer	Chris Shang	High School Intern	Mentor	Central High School (Later admitted to UMich)
2022 Summer	Jenny Qi	High School Intern	Mentor	Northern High School (Later admitted to UMich)
2022 Summer	Rohit Agarwal	High School Intern	Mentor	City High School (Later admitted to Emory)
2023 - Present	Aakash Dave	Medical Student	Mentor	Medical School
2023 - 2024	Tian Cai	CS PhD Student at CUNY University	Thesis Committee	Startup
2023 - Present	Aoqi Xie	Statistics PhD Student	Thesis Committee	
2023 Summer	Eileen Zhan	High School Intern	Mentor(Co- mentored by Xiaodan Zhang)	Central High School (Later admitted to University of Chicago)
2023 Summer	Alexis Zhang	High School Intern	Mentor (Co-mentor ed by Xiaodan Zhang)	Newark Academy High School
2023 - Present	Sardar Mehtab Bin Murtaza	MSU Undergraduate	Mentor	
2024	Christine Skovira	MSU Medical Student	Project Mentor	Medical School (won ANPA Young Investigator Award 2024
2024 - Present	Shubham Koirala	PhD Student in Genetics and Genome Sciences	Mentor	
2024 - Present	lan Loveless	CMSE PhD Student	Thesis Committee	
2024 - Present	Linqing Mo	Data Science MS Student	Co-Mentor	

Dates	Name	Program or School	Mentor Type	Position After Training
2024 - Present	Lingxiao Li	CS PhD Student	Co-Mentor	
2024 - Present	Haohao Su	PhD Student in Statistics	Thesis Committee	
2024 - Present	Emmanuel Paul	K99 Awardee	Co-Mentor	
2024 - Present	Joseph Burke	MSU Undergraduate	Mentor	
2024	Seungmin Yoon	BMS PhD Student	Rotation	
2024 - Present	David Qiu	Tenure-track faculty	Mentor	
2024 - Present	Wei Wang	Tenure-track faculty	Mentor	
2025 - Present	Zsolt Palmer	BMS PhD Student	Mentor	
2025 - Present	Georgina (Gina) Brown-Stepli tus	MD/PhD Student	Thesis Committee	

# **EXAMPLES OF TRAINEE ACHIEVEMENTS (2018 - 2023 at MSU)**

#### **Postdoctoral Scholars**

**Ke Liu, PhD** (2018-2020): Dr. Liu joined as a postdoc in 2018 and was promoted to Research Assistant Professor in 2020, leading the EHR (Electronic Health Record) big data program between Spectrum Health and MSU. During his training in the lab, he published one first-author paper in *Nature Communications* and a few others. He was recruited to become Professor at Shandong University in China and was **named as Qilu Scholar**, a prestigious award for attracting scholars from abroad.

**Patrick Newbury, MD** (2018-2019): Within one year in my lab, Dr. Newbury published two first-author papers (one in *Nature Protocols*). His DIPG (Diffuse Intrinsic Pontine Glioma) work was chosen as one of the six oral presentations from over 50 submissions in the MSU Pediatrics Research Day 2019. Although he did not match during his medical school, the one-year training in my lab helped him **get into a competitive radiation oncology program** at the University of Oklahoma (only a few CHM students are accepted into radiation oncology programs each year).

Rama Shankar, PhD (2018 - Present): Dr. Shankar's MODS (Multiple Organ Dysfunction Syndrome) work was chosen as one of the six oral presentations in the MSU Pediatrics Research Day, though the conference was canceled. He presented his work at ICIBM 2019 and the American Association for Cancer Research (AACR) annual meeting. His first author paper was published in the EBioMedicine (The Lancet) in 2020 with two others under review in high-profile journals. He received K99, a very competitive career training award.

Jing Xing, PhD (2018-2023): Dr. Xing's SARS-CoV-2 work was chosen as one of the six oral presentations in the MSU Pediatrics Research Day 2021 and was selected as an oral presentation in the joint conference between Intelligent Systems for Molecular Biology and European Conference on Computational Biology (ISMB/ECCB 2021). The work was subsequently published in Briefings in Bioinformatics. Her following work on COVID drug repurposing was published in iScience (Cell publishing group) and her major manuscript is under review. Jing started her lab at Shanghai Institute of Materia Medica (SIMM), Chinese Academy of Sciences in 2023.

#### **PhD Students**

**Mengying Sun** (2019-2022): Mengying was a Computer Science PhD student, co-advised by Prof. Jiayu Zhou and me. Mengying published three papers in top computer science conferences and **won the Best Paper Award** at the KDD Health Day. She joined Meta as a data scientist in 2022.

**Shan-Ju Yeh** (2019-2021): Shan-Ju was a visiting PhD student in Electrical Engineering from Taiwan National Tsinghua University. She developed TransCell, which was published at GPB (IF: 11). She started a **fixed-term assistant professor position at Taiwan National Tsinghua University** in August 2022 and was promoted to a tenure-track assistant professor in 2024.

#### **RESEARCH AWARDS - CURRENT**

1.	R01 GM134307	PI	23% effort	Chen (PI)	
	NIH/NIGMS		09/01/2019	07/30/2025 (NCE)	
	Repurpose open data to discontherapeutics for understudied		\$300,000 direct/year		
2.	R01 GM145700	PI	15% effort	Chen, Zhou (MPI)	
	NIH/NIGMS (scored 7%)		6/01/2022	5/30/2026	
	Virtual compound screening undexpression  Develop ML to support novel of discovery for a renge of discovery.	compound	\$420,807/year		
2	discovery for a range of disea R03 AG075465		10/ offert	Loo (DI)	
3.		Co-I	1% effort	Lee (PI)	
	NIH/NIA		06/15/2022	03/31/2025 (NCE)	
	Oxylipins, aging and Alzheime	er's disease	10% to a technician		
4.	DeVos Cardiovascular Research Pilot Grants	Co-I (Site PI)	1% effort	Trethowan (PI)	
	Frederick Meijer Heart & Vascular Institute		04/01/2023	8/30/2025 (NCE)	
	Delineating Cellular and Molecular Pathways in different Stages of Cardiogenic Shock		\$140,000 direct to Chen		
5.	Supplement to R01 GM134307	PI	10% effort	Chen (PI)	
	NIH/NIA		08/01/2023	7/30/2025 (NCE)	
	NIGMS supplement to suppor disease research	t Alzheimer's	\$346,747 total		
6.	Supplement to R01 GM145700	PI	1% effort	Chen, Zhou (MPI)	

	NIH/OD Equipment purchases for R01GM145	700	08/01/2022 \$103,178 total	5/31/2026
7	MSU SPG grant PI	700	1% effort	Chen (PI)
•	MSU Foundation		07/01/2023	6/30/2025
	Al Center for drug discovery		\$240,000 total	0/00/2020
8	MSU-Corewell Pilot Co-I		1% effort	Girgis, Quinn, Li (MPI)
	MSU-Corewell Alliance		02/01/2024	01/31/2027
	Role of Specialized Metabolites from		10% to a technician	
	Pseudomonas aeruginosa in the Pathogenesis of Chronic Lung Allogra Dysfunction	aft		
9	DOD HT94252410133 Co-I (Site	e PI)	5% effort	Li (PI)
	DOD (subcontract from the U of Toled	do)	2/15/2024	2/14/2027
	Dormancy mimicking to inhibit prostat metastasis and recurrence	te cancer	\$200K to Chen total	
10	NIH K99HD111575		Mentor	Shankar (PI)
	NIH/NICHD		08/07/2024	7/31/2026
	Single cell multi-omics approaches in driving cells and genes in pediatric Mopatients requiring ECMO support		\$120k direct/year	
11	NIH GM145700 Diversity Supplement	t	Mentor	Chen (PI)
	NIH/OD		08/01/2024	5/31/2026
	Research Supplement to Promote Div R01GM145700	versity for	\$124,874 total	
12	NIH R01CA286189 co-l (site PI)		5% effort	Li (PI)
	NIH/NCI (scored 5%)		02/01/2025	1/31/2030
	Dormancy mimicking to inhibit prostat metastasis progression and recurrence		\$50K direct/year	
13	NIH R61HL177451 MPI		10%	Li, Chen (MPI)
	NIH/NHLBI		4/01/2024	3/30/2027
	Screening of novel compounds through the reversal of gene expression in idiopathic pulmonary fibrosis		\$350K direct/year	
14	NINR03CA283359 co-l			GUILLAUME (PI)
	NIH/NCI		04/08/2024	03/31/2026
	Disentangling the effect of Black/African Ancestry from confounding variables on colorectal cancer biology			
15	NIH R01HD116742	co-l	1%	Fazleabas (PI)
	NIH/NICHD		09/12/2025	08/31/2030

Transcriptomic Changes during early endometriotic lesion development

\$490,000 direct per year

**RESEARCH AWARDS - PENDING** 

	1 NIH R01	co-l			Morgan (PI)
	Reelin signaling and amyloid induced tau	the regulation of		12/01/2025	11/30/2030
	Scored 6%	opatity		\$3.8M	
2	2 NIH R01		PI		Chen, Morgan (MPI)
	Reversing the progressystems-based approved to the systems of the progression of the prog		disease through a	04/01/2024 \$500K per year	03/31/2029
;	3 NIH R01		PI		Chen (PI)
	What are γδ T cells? Science Approaches V1 is being reviewed		n Using Data	12/01/2024 \$500K per year	11/30/2029
4	4 NIH R35		PI		Chen (PI)
	Transcriptomics-bas ed drug discovery			04/01/2025	03/31/2030
	Scored and will resu	bmit		\$500K per year	
į	5 NIH R01		PI		Chen, Zhou, Chesla (MPI)
		osis of Mild Cognitive loulations Using Large h Records	•	04/01/2025	03/31/2030
	Not Discussed, and	will revise		\$500K per year	
(	3 NIH R01		MPI		Chen, Chen, Xu (PI)
	Functions and therapeutic targeting			04/01/2025	03/31/2030
	of TEAD-YAP/TAZ signaling in liver cancer			\$500K per year	
_	V0 score 30 (18%)	5.			
	7 NIH R01	PI		10/04/0005	Chen (PI)
	Automated Curation of Open			12/01/2025	11/30/2029
	Transcriptomic Datasets with Al Agents			\$250K per year	
8	3 NIH R01		MPI		Li, Chen (PI)

Targeting
Profibrotic Gene
Signatures with
Small Molecules to
Uncover
Mechanisms in IPF
Pathogenesis

12/01/2025 11/30/2030

\$500k per year

### **RESEARCH AWARDS - PAST**

Stanford SPARK program Co-I 0 % effort So (PI)
 Stanford SPARK 01/01/2016 12/31/2016
 Translating niclosamide ethanolamine for the treatment of hepatocellular carcinoma

\$30,000 direct/yr 1
\$30,000 total

Conduct PK/PD/Toxicity study on niclosamide ethanolamine in animal models

2. P01 PAR-13-321 co-I 5% effort Esserman & Hylton (MPI)

NIH/NCI 07/01/2017 3/31/2018

I-SPY2 +: Evolving the I-SPY 2 TRIAL to include MRI-directed, adaptive sequential treatment to optimize breast cancer outcomes direct/yr 1 total

Develop, implement, and validate a strategy to address insufficient response to neoadjuvant therapy in high-risk breast cancer

Lead the effort to develop a portfolio of agents for switching that match biology of residual tumor burden (Project 4)

Project terminated due to career move

3. L'Oreal & UCSF collaboration Co-I 5 % effort Butte (PI)
L'Oreal & UCSF collaboration 07/01/2017 3/31/2018
Leveraging big data to predict new targets and compounds for hyperpigmentation \$499,374 total

Develop a computational method to identify new drugs for hyperpigmentation

Lead the effort on drug predictions

Project terminated due to career move

4. U24DK116215 Co-I 5% effort McManus &

Jan (MPI)

NIH/NIDDK 11/01/2017 3/31/2018

Illuminating the Dark Kinome \$ 1,600,000 direct/yr 1

Facilitate the unveiling of functions of poorly characterized members of the human kinome using experimental and informatics approaches.

Informatics core lead

Project terminated due to career move

5. R21TR001743 PI 10% effort Chen (PI) NIH/ NCATS 8/01/2017 7/31/2019

Targeting Glucose Metabolism for the Treatment of \$216,349 direct/yr 1 Hepatocellular Carcinoma

The goal of this project is to validate the efficacy of a few drug candidates that target glucose metabolism for the treatment of hepatocellular carcinoma in preclinical models.

6. Amazon AWS Research Credit PI Chen (PI)

Amazon 04/19/2019 04/19/2019

Cloud research credit to develop OCTAD \$1,500

direct

7. 1OT2TR003426-01 PI 1% effort Chen (PI) NIH/NCATS 01/24/2020 05/31/2020

Drug biomarker resources for precise translational \$87,195 research direct

Create drug biomarker resources from public databases

8. Henlius PI 1% effort Chen (PI)

Industry-sponsored 5/01/2019 11/30/2021 (NCE)

Big data approach to identify next generation \$124,000 direct/yr 1

immuno-oncology targets

This collaborative proposal is aimed to propose novel targets to increase immunotherapy response.

9. FAIN2028717 co-PI Ding (PI)

NSF 07/01/2020 12/31/2021

RAPID: Dashboard for COVID-19 Scientific Development \$50,000

direct to Chen

Develop a dashboard for COVID-19 research.

10 BD2K K01 ES028047 PI 50% effort Chen (PI)

NIH/NIEHS 05/01/2017 04/30/2022 (NCE)

Integrating transcriptomic, proteomic and \$171,216 \$684,864 total

pharmacogenomic data to inform individualized therapy in direct/yr 1

cancers

Develop biomarkers from cell lines to guide cancer therapy

11. Global Impact Initiative PI Chen (PI)

MSU 4/01/2018 3/31/2023

MSU startup funds

12 Spectrum Health-MSU Alliance Co-I 1% effort Prokop, Hartog (MPI)

Spectrum Health-MSU Alliance Cooperation 3/1/2021 8/31/2022

Acute and chronic immune precision medicine program at

Spectrum Health centered on COVID-

19

Assist bioinformatics analysis of RNASeg samples

13 Spectrum Health-MSU Alliance Co-I 1% effort Girgis, Li, Uhal, Neubig

(MPI)

Spectrum Health-MSU Alliance Cooperation 10/01/2021 3/31/2023

Pilot Studies for Fibrosing Lung Disease Therapeutics 10% to one Center of Excellence technician

Assist bioinformatics analysis of bulk and single cell RNASeq samples

14 R01 Supplement PI 1% effort Chen (PI)

NIGMS Diversity Supplement Program for the 12/01/2021 8/30/2022

active R01 GM134307 \$57,000

15 HFH-MSU pilot MPI 1% effort Chen, Ghosh (PI)

Henry Ford Health – MSU joint cancer pilot 7/01/2022 12/30/2023

Development of novel small molecule inhibitors of \$8000

Tribbles 2 using artificial intelligence

16 Spectrum Health-MSU Alliance PI 1% effort Chen (PI)
Spectrum Health-MSU Alliance Cooperation 07/01/2019 01/30/2024

Processing Health MCLI Dis Data Callaborative Dragram #967.744

Spectrum Health-MSU Big Data Collaborative Program \$867,744 total

17 MSU-HFH pilot PI 1% effort Chen, Steele

(MPI)

MSU-HFH Partnership 09/01/2023 08/31/2024

Interrogating the phenotype and function of  $v\delta T$  \$100,000 total

cells in pancreatic cancer liver metastasis

 18 Internal Autism Grant
 PI
 1% effort
 Chen (PI)

 Mall Family
 03/01/2023
 2/28/2025

Integrating emerging single cell genomics and

electronic health records to identify repurposing \$30,000 direct to

drug candidates for autism spectrum disorder Chen

#### **INVENTIONS**

- 1.  $\gamma\delta2$  T cells as a diagnostic biomarker and therapeutic target in liver cancer (disclosure filed)
- 2. S100 genes as a diagnostic biomarker in MODS (disclosure filed)
- 3. Two repurposing candidates for IPF (disclosure filed)

4. Novel compounds for HCC (disclosure filed)

# PEER REVIEWED PUBLICATIONS (\* co-corresponding, # co-first)

## https://scholar.google.com/citations?user=K7MBJIwAAAAJ&hl=en

- 1. Shi L-W, **Chen B**, Zhou J-H, Zhang T, Kang Q, Chen M-B. Structure and Relative Stability of Drum-like C4 n N2 n (n= 3– 8) Cages and Their Hydrogenated Products C4 n H4 n N2 n (n= 3– 8) Cages. The Journal of Physical Chemistry., 2008;112(46):11724-30.
- Scheiber J, Chen B, Milik M, Sukuru SC, Bender A, Mikhailov D, Whitebread S, Hamon J, Azzaoui K, Urban L, Glick M, Davies JW, Jenkins JL. A Comprehensive Systems Chemical Biology Analysis Gains Insight into Off-Target Mediated Effects of Drug Candidates, J Chem Inf Model., 2009, 49 (2), 308-317
- 3. **Chen B**, Wild D, Guha R. PubChem Bioassays as a Source of Polypharmacology, J Chem Inf Model., 2009, 49(9), 2044-55
- 4. **Chen B**, Wild D. PubChem as a data source for predictive models, J Mol Graph Model., 2010, 28(5):420-6
- 5. **Chen, B.**, Dong. X., Jiao, D., Wang, H., Zhu, Q., Ding, Y., Wild, D.J. Chem2Bio2RDF: a semantic framework for linking and data mining chemogenomic and systems chemical biology data. BMC Bioinformatics, 2010, 11:255
- 6. Dong, X., Ding, Y., Wang, H., **Chen, B.**, Wild, D.J. Chem2Bio2RDF Dashboard: Ranking Semantic Associations in Systems Chemical Biology Space. Future of the Web in Collaborative Science (FWCS), WWW2010, Apr 26-30, 2010, Raleigh NC
- 7. **Chen, B.**, Ding, Y., Wang, H., Wild, D., Dong, X., Sun, Y., Zhu, Q., & Sankaranarayanan, M. (2010). Chem2Bio2RDF: A Linked Open Data Portal for Chemical Biology. IEEE/WIC/ACM International Conferences on Web Intelligence, Aug 31-Sep 3, 2010, Toronto, Canada (acceptance rate 16.6%, best paper shortlist)
- 8. Ding, Y., Sun, Y., **Chen, B.**, Borner, K., Ding, L., Wild, D., Wu, M., DiFranzo, D., Fuenzalida, A. G., Li, D., Milojevic, S., Chen, S., Sankaranarayanan, M. & Toma, I. Semantic Web Portal: A Platform for Better Browsing and Visualizing Semantic Data. Proceedings of the 2010 International Conference On Active Media Technology (AMT2010), Lecture Notes in Artificial Intelligence (LNAI), Springer, Aug 28-30, 2010, Toronto, Canada
- 9. Choi, J.Y., Bae, S.H., Qui, J., **Chen, B.**, Wild, D.J. Browsing large scale cheminformatics data with dimension reduction. Currency and Computation: Practice and Experience, 2011, 23: 2315-2325.
- Chen B, McConnell KJ, Wale N, Wild DJ, Gifford EM. Comparing Bioassay Response and Similarity Ensemble Approaches to Probing Protein Pharmacology, Bioinformatics, 2011, 27(21):3044-9
- 11. He, B., Tang, J., Ding, Y., Wang, H., Sun, Y., Shin, J.H., **Chen, B.**, Moorthy, G., Qiu, J., Desai, P., Wild, D.J., Mining relational paths in biomedical data, PLOS ONE, 2011, e27506
- 12. **Chen B**, Ding Y, Wild DJ. Improving integrative searching of systems chemical biology data using semantic annotation. Journal of Cheminformatics. 2012;4:6

- 13. **Chen B**, Sheridan RP, Hornak V, Voigt JH. Comparison of random forest and Pipeline Pilot Naive Bayes in prospective QSAR predictions. Journal of Chemical Information and Modeling. 2012 Mar 26;52(3):792-803.
- 14. **Chen B**, Ding Y, Wild DJ. Assessing Drug Target Association using Semantic Linked Data. PLoS Computational Biology. 2012;8(7):e1002574. (citations > 50)
- 15. Willighagen EL, Waagmeester A, Spjuth O, Ansell P, Williams AJ, Tkachenko V, Hastings J, **Chen B**, Wild DJ. The ChEMBL database as linked open data. Journal of Cheminformatics. 2013;5(1):1-12.3
- 16. **Chen B\***, Wild DJ\*. Practice and Challenges of Building a Semantic Framework for Chemogenomics Research. Molecular Informatics. 2013;32(11-12):1000-8.
- 17. Auerbach RK, **Chen B**, Butte AJ. Relating genes to function: identifying enriched transcription factors using the ENCODE ChIP-Seq significance tool. Bioinformatics. 2013;29(15):1922-4.
- 18. **Chen B**, Butte A. Network medicine in disease analysis and therapeutics. Clinical Pharmacology & Therapeutics. 2013;94(6):627-9.
- 19. Wu M, Sirota M, Butte AJ, **Chen B.**, Characteristics Of Drug Combination Therapy In Oncology By Analyzing Clinical Trial Data On Clinicaltrials.gov, Pacific Symposium on Biocomputing (PSB) 2015, Hawaii
- 20. Fan-Minogue H\*\*, **Chen B**\*\*, Sikora-Wohlfeld W, Sirota M, Butte AJ. A systematic assessment of linking gene expression with genetic variants for prioritizing candidate targets. Pacific Symposium on Biocomputing (PSB) 2015, Hawaii
- 21. **Chen B**, Sirota M, Fan-Minogue H, Hadley D, Butte AJ. Relating Hepatocellular Carcinoma Tumor Samples and Cell Lines Using Gene Expression Data in Translational Research. BMC Biomedical Genomics. 2015; 8 (Suppl 2), S5
- 22. Li J, Zheng S, **Chen B**, Butte AJ, Swamidass JS, Lu Z. A Survey of Current Trends in Computational Drug Repositioning. Briefings in Bioinformatics. 2016, 17 (1): 2-12.
- 23. **Chen B.**, Greenside P., Paik H., Sirota M., Hadley D., Butte AJ. Relating chemical structure to cellular response: an integrative analysis of gene expression, bioactivity and structural data across 11000 compounds, CPT: pharmacometrics & systems pharmacology, 2016, 4 (10), 576-584
- 24. Fu G, Ding Y, Seal A, **Chen B**, Sun Y, Bolton E. Predicting drug target interactions using meta-path-based semantic network analysis. BMC Bioinformatics. 2016; 17(1):160.

#### After I became a faculty member

- 25. Chen B.\*, Butte AJ.\*, Leveraging Big Data to Transform Target Selection and Drug Discovery, Clin Pharmacol Ther. 2016, 99(3):285-97. PMID: 26659699
- 26. Paik H, **Chen B**, Sirota M, Hadley D, Butte AJ. Integrating Clinical Phenotype and Gene Expression Data to Prioritize Novel Drug Uses. CPT Pharmacometrics Syst Pharmacol. 2016 Nov; 5(11):599-607. PMID: 27860440.
- 27. Pessetto ZY, Chen B, Alturkmani H, Hyter S, Flynn CA, Baltezor M, Ma Y, Rosenthal HG, Neville KA, Weir SJ, Butte AJ, Godwin AK. In Silico and In Vitro Drug Screening Identifies New Therapeutic Approaches for Ewing Sarcoma, Oncotarget, 2017:8(3):4079-95. doi: 10.18632/oncotarget.13385, PMID: 27863422

28. **Chen B**\*, Wei W\*, Ma L, Yang B, Gill RM, Chua MS, Butte AJ, and So S, Computational discovery of niclosamide ethanolamine as a repurposed drug for hepatocellular carcinoma that acts through inhibition of CDC37-mediated signaling, Gastroenterology, 2017 Jun; 152(8):2022-2036. PMID: 28284560. (IF 20)

#### **Press**

- \*Deworming Pill May Be Effective in Treating Liver Cancer (UCSF press release)
- \*Bioinformatic Search Identifies Tapeworm Drug for Treatment of Hepatocellular Carcinoma (Featured in Gastro journal)
- \*New Approach to Drug Discovery Finds Veterinary Pill Helps Mice Fight Liver Cancer (LIVER DISEASE NEWS)
- \*Featured in the UCSF Magazine Winter 2018 and the UCSF Cancer Year in Review: 2017
- 29. **Chen B**\*\*, Ma L\*\*, Paik H, Sirota M, So S, Chua MS\*, Butte AJ\*. Reversal of cancer gene expression correlates with drug efficacy and suggests therapeutic targets, Nat Commun. 2017 Jul 12; 8:16022. PMID: 28699633.

- \*Big-Data Analysis Points Toward New Drug Discovery Method (UCSF press release, Science Daily, EurekAlert)
- \*Database sleuths turn up a surprising new drug to test against cancer (STAT)
- \*Systems Study Taps Cancer Gene Expression Reversal to Predict Drug Response (genomeweb)
- \*How Big Data Is Transforming Medicine (HuffPost)
- \*New Computational Method to Aid Cancer Drug Discovery (Genetic Engineering & Biotechnology News)
- \*UCSF-led research produces method for probing new drug use (XINHUA) \*Featured in KCBS
- 30. Hadley D, Pan J, El-Sayed O, Aljabban J, Aljabban I, Azad TD, Hadied MO, Raza S, Rayikanti BA, **Chen B**, Paik H, Aran D, Spatz J, Himmelstein D, Panahiazar M, Bhattacharya S, Sirota M, Musen MA, Butte AJ. Precision annotation of digital samples in NCBI's gene expression omnibus. Sci Data. 2017 Sep 19; 4:170125. PMID: 28925997.
- 31. Mirza AN, Fry MA, Urman NM, Atwood SX, Roffey J, Ott GR, **Chen B**, Lee A, Brown AS, Aasi SZ, Hollmig T, Ator MA, Dorsey BD, Ruggeri BR, Zificsak CA, Sirota M, Tang JY, Butte A, Epstein E, Sarin KY, Oro AE. Combined inhibition of atypical PKC and histone deacetylase 1 is cooperative in basal cell carcinoma treatment. JCI Insight. 2017 Nov 02; 2(21). PMID: 29093271.
- 32. Sharpnack MF, **Chen B**, Aran D, Kosti I, Sharpnack DD, Carbone DP, Mallick P, Huang K. Global Transcriptome Analysis of RNA Abundance Regulation by ADAR in Lung Adenocarcinoma. EBioMedicine. 2017 Dec 06. PMID: 29273356.
- 33. Zhang S, Wang J, Wang H, Fan L, Fan B, Zeng B, Tao J, Li X, Che L, Cigliano A, Ribback S, Dombrowski F, **Chen B**, Cong W, Wei L, Calvisi DF, Chen X. Hippo Cascade Controls Lineage Commitment of Liver Tumors in Mice and Humans. Am J Pathol. 2018 Jan 31. PMID: 29378174.

- 34. Shanshan Zhang, Xinhua Song, Dan Cao, Zhong Xu, Biao Fan, Li Che, Junjie Hu, **Bin Chen**, Mingjie Dong, Maria G Pilo, Antonio Cigliano, Katja Evert, Silvia Ribback, Frank Dombrowski, Rosa M Pascale, Antonio Cossu, Gianpaolo Vidili, Alberto Porcu, Maria M Simile, Giovanni M Pes, Gianluigi Giannelli, John Gordan, Lixin Wei, Matthias Evert, Wenming Cong, Diego F Calvisi, Xin Chen, Pan-mTOR inhibitor MLN0128 is effective against intrahepatic cholangiocarcinoma in mice, J Hepatol . 2017 Dec;67(6):1194-1203. doi: 10.1016/j.jhep.2017.07.006. Epub 2017 Jul 19. PMID: 28733220 (IF: 20)
- 35. William Zeng, Benjamin Glicksberg, Yangyan Li, **Bin Chen,** Selecting precise reference normal tissue samples for cancer research using a deep learning approach, BMC Med Genomics. 2019 Jan 31;12(Suppl 1):21. doi: 10.1186/s12920-018-0463-6. PMID: 30704474
- 36. Zhiyue Tom Hu, Yuting Ye, Patrick Newbury, Haiyan Huang\*, **Bin Chen**\*, AICM: A Genuine Framework for Correcting Inconsistency Between Large Pharmacogenomics Datasets, <a href="https://doi.org/10.1101/386896">https://doi.org/10.1101/386896</a>, PSB, 2019, PMID: 30864327
- 37. Benjamin S. Glicksberg, Li Li, Rong Chen, Joel Dudley, **Bin Chen**. Book Chapter: Leveraging Big Data to Transform Drug Discovery (Bioinformatics in Drug Discovery 3rd Ed. Editors: Richard Larson, MD, PhD & Tudor Opera, MD, PhD), Methods Mol Biol. 2019;1939:91-118. doi: 10.1007/978-1-4939-9089-4 6. PMID: 30848458
- 38. **Bin Chen\***, Lana Garmire, Diego F. Calvisi, Mei-Sze Chua, Xin Chen, Harnessing big omics data and artificial intelligence to guide therapeutic discovery in hepatocellular carcinoma. Nature Reviews Gastroenterology and Hepatology; doi: 10.1038/s41575-019-0240-9. PMID: 31900465 (IF 30)

#### **Press**

- \*Big data targets deadly liver cancer (MSU Today)
- 39. Liu K, Newbury PA, Glicksberg BS, Zeng WZD, Paithankar S, Andrechek ER, **Chen B**., Nat Commun. 2019 May 15;10(1):2138. doi: 10.1038/s41467-019-10148-6. PMID: 31092827

- \*Big data helps identify better way to research breast cancer's spread (MSU press release, Science Daily, EurekAlert)
- \*Breast Cancer Cell Lines Get Big Data Assistance (GEN News)
- \*Are Cell Lines the Best Model to Analyze Breast Cancer Biology? (I3Health News)
- \*Big data helps determine better research models to fight the spread of breast cancer (The Medical News)
- \*Using Big Data to Improve Metastatic Breast Cancer Research (Specialty Pharmacy Times)
- \*Tweeted by NCI Genomices, NatRevClinOncol and many others
- \*Select as an NIEHS Extramural Paper of the Month
- 40. K. Yu, B. Chen, D. Aran, J. Charalel, C. Yau, D. M. Wolf, L. J. van 't Veer, A. J. Butte, T. Goldstein & M. Sirota, Comprehensive transcriptomic analysis of cell lines as models of primary tumors across 22 tumor types, Nature Communications, volume 10, Article number: 3574 (2019). PMID:31395879

41. McMahon M, Contreras A, Holm M, Uechi T, Forester CM, Pang X, Jackson C, Calvert ME, Chen B, Quigley DA, Luk JM, Kelley RK, Gordan JD, Gill RM, Blanchard SC, Ruggero D. A single H/ACA small nucleolar RNA mediates tumor suppression downstream of oncogenic RAS. Elife. 2019 Sep 3;8. pii: e48847. doi: 10.7554/eLife.48847. PMID: 31478838

- 42. Hyojung Paik, Matthew J. Kan, Nadav Rappoport, Dexter Hadley, Marina Sirota, **Bin Chen**, Udi Manber, Seong Beom Cho & Atul J. Butte, Tracing diagnosis trajectories over millions of patients reveal an unexpected risk in schizophrenia, Scientific Data volume 6, Article number: 201 (2019), PMID: 31615985
- 43. Julia Rohrberg, Daniel Van de Mark\*, Meelad Amouzgar\*, Joyce Lee, Moufida Taileb, Alexandra Corella, Seda Kilinc, Jeremy Williams, Marie-Lena Jokisch, Roman Camarda, Sanjeev Balakrishnan, Rama Shankar, Alicia Zhou, Aaron N Chang, **Bin Chen**, Hope Rugo, Sophie Dumont, and Andrei Goga, MYC Dysregulates Mitosis Revealing New Cancer Vulnerabilities, Cell Rep. 2020 Mar 10;30(10):3368-3382.e7. doi: 10.1016/j.celrep.2020.02.041. PMID: 32160543 PMCID: PMC7085414
- 44. Jeremy W Prokop, Rama Shankar, Ruchir Gupta, Mara L Leimanis, Derek Nedveck, Katie Uhl, Bin Chen, Nicholas L Hartog, Jason Van Veen, Joshua S Sisco, Olivia Sirpilla, Todd Lydic, Brian Boville, Angel Hernandez, Chi Braunreiter, ChiuYing Cynthia Kuk, Varinder Singh, Joshua Mills, Marc Wegener, Marie Adams, Mary Rhodes, Andre S Bachmann, Wenjing Pan, Miranda L Byrne-Steele, D Casey Smith, Mollye Depinet, Brittany E Brown, Mary Eisenhower, Jian Han, Marcus Haw, Casey Madura, Dominic J Sanfilippo, Laurie H Seaver, Caleb Bupp, Surender Rajasekaran, Translational and Precision Medicine: Virus-induced genetics revealed by multidimensional precision medicine transcriptional workflow applicable to COVID-19, Physiol Genomics. 2020 Jun 1; 52(6): 255–268, PMID: 32437232
- 45. Billy Zeng\*, Benjamin S. Glicksberg\*, Patrick Newbury\*, Eugene Chekalin\*, Jing Xing, Ke Liu, Anita Wen, Caven Chow, **Bin Chen**, OCTAD: an open workplace for virtually screening therapeutics targeting precise cancer patient groups using gene expression features, Accepted, Nature Protocols, 2020 Dec 23. doi: 10.1038/s41596-020-00430-z. PMID:33361798

- \*BioArt, a leading biomedical media based on WeChat platform in China with more than 500 thousand followers.
- 46. Mengying Sun, Jing Xing, **Bin Chen**, Jiayu Zhou, Robust Collaborative Learning with Noisy Labels, ICDM 2020, acceptance rate (19.76%), <a href="https://doi.org/10.48550/arXiv.2012.13670">https://doi.org/10.48550/arXiv.2012.13670</a>
- 47. Zhou G, Holzman C, **Chen B**, Wang P, Heng YJ, Kibschull M, Lye SJ, Kasten EP. EBF1-correlated long non-coding RNA transcript levels in 3rd trimester maternal blood and risk of spontaneous preterm birth. Reproductive Sciences. 2020; PMID: 32959224. DOI: 10.1007/s43032-020-00320-5.
- 48. Rama Shankar, Mara L. Leimanis, Patrick A. Newbury, Ke Liu, Jing Xing, Derek Nedveck, Eric J. Kort, Jeremy W Prokop, Guoli Zhou, André S Bachmann, **Bin Chen\***, Surender Rajasekaran\*, Gene expression signatures identify pediatric patients with multiple organ dysfunction who require advanced life support in the intensive care unit EBioMedicine (The Lancet), 2020 Dec;62:103122. doi: 10.1016/j.ebiom.2020.103122. Epub 2020 Nov 25.

49. Wyatt Boothby-Shoemaker, Vanessa Benham, Shreya Paithankar, Rama Shankar, **Bin Chen**, Jamie J Bernard, The Relationship between Leptin, the Leptin Receptor and FGFR1 in Primary Human Breast Tumors, Cells. 2020 Oct 1;9(10):2224. doi: 10.3390/cells9102224.

- 50. Calvin Chi, Yuting Ye, **Bin Chen**, Haiyan Huang, Bipartite graph-based approach for clustering of cell lines by gene expression-drug response associations, Bioinformatics, PMID: 33682877 DOI: 10.1093/bioinformatics/btab143
- 51. Mengying Sun, Jing Xing, Huijun Wang, **Bin Chen**, Jiayu Zhou, MoCL: Contrastive Learning on Molecular Graphs with Multi-level Domain Knowledge, KDD, 2021, <a href="https://arxiv.org/abs/2106.04509">https://arxiv.org/abs/2106.04509</a> (acceptance rate 15.4%)
- 52. Jing Xing, Shreya Paithankar, Ke Liu, Katie Uhl, Xiaopeng Li, Meehyun Ko, Seungtaek Kim, Jeremy Haskins, **Bin Chen\*** Published Anti-SARS-CoV-2 In Vitro Hits Share Common Mechanisms of Action that Synergize with Antivirals, Briefings in Bioinformatics (IF=11), 2021, PMID: 34245241 DOI: 10.1093/bib/bbab249

- \* COVID-19 researchers review 184 drug repurposing candidates (news-medical)
- 53. Jeremy W Prokop, Nicholas Hartog, Dave Chesla, William Faber, Chanise P Love, Rachid Karam, Nelly Abualkheir, Benjamin Feldmann, Li Teng, Tamara Mcbride, Mara L Leimanis Laurens, B Keith English, Amanda R Holsworth, Austin Frisch, Jacob Bauss, Nathisha Kalpage, Aram Derbedrossian, Ryan M Pinti, Nicole Hale, Elizabeth A Vansickle, Spencer C Pageau, Rama Shankar, **Bin Chen**, Joseph Anthony Carcillo, Dominic Sanfilippo, Rosemary Olivero, Caleb P Bupp, Surender Rajasekaran, High-Density Blood Transcriptomics Reveals Precision Immune Signatures of SARS-CoV-2 Infection in Hospitalized Individuals, Frontiers in Immunology, 2021, PMID: 34335605 <a href="https://doi.org/10.3389/fimmu.2021.694243">https://doi.org/10.3389/fimmu.2021.694243</a>
- 54. Alice Taubes, Phil Nova, Kelly Zalocusky, Dr Idit Kosti, Mesude Bicak, Dr Misha Zilberter, Yanxia Hao, Ms Seo Yoon, Tomiko Oskotsky, Silvia Pineda, Professor **Bin Chen**, Emily Jones, Dr Krishna Choudhary, Dr Brian Grone, Maureen Balestra, Fayzan Chaudhry, Ishan Paranjpe, Jessica De Freitas, Ms Nicole Koutsodendris, Dr Qin Xu, Mr David Walker, William Chang, Alice An, Professor Benjamin Glicksberg, Dr Marina Sirota, Dr Yadong Huang, Experimental and real world evidence supporting the computational repurposing of bumetanide to prevent or treat APOE4-related Alzheimer's disease, Nature Aging, 1, 932–947 (2021). https://doi.org/10.1038/s43587-021-00122-7
- 55. Sean A Misek, Patrick A Newbury, Evgenii Chekalin, Shreya Paithankar, Andrea I Doseff, **Bin Chen**\*, Kathleen A Gallo\*, Richard R Neubig\*, Ibrutinib blocks YAP1 activation and reverses BRAFi resistance in melanoma cells, Molecular Pharmacology, PMID: 34732527, 2022, DOI: 10.1124/molpharm.121.000331
- 56. Shang Su, Jingchen Cao, Xiangqi Meng, Ruihua Liu, Alexandra Vander Ark, Erica Woodford, Reian Zhang, Isabelle Stiver, Xiaotun Zhang, Zachary B Madaj, Megan J Bowman, Yingying Wu, H Eric Xu, Bin Chen, Haiquan Yu, Xiaohong Li, Enzalutamide-induced and PTH1R-mediated TGFBR2 degradation in osteoblasts confers resistance in prostate cancer bone metastases, Cancer Letters, 2022, PMID: 34752846 DOI: 10.1016/j.canlet.2021.10.042
- 57. Jacob Bauss, Michele Morris, Rama Shankar, Rosemary Olivero, Leah N Buck, Cynthia L Stenger, David Hinds, Joshua Mills, Alexandra Eby, Joseph W Zagorski, Caitlin Smith, Sara

Guenthner Cline, Nicholas Hartog, **Bin Chen**, John Huss, Joseph Anthony Carcillo, Surender Rajasekaran, Caleb Bupp, Jeremy W Prokop, CCR5 and biological complexity: the need for data integration and educational materials to address genetic/biological reductionism at the interface of Ethical, Legal, and Social Implications, Frontiers in Immunology, 2021, PMID: 34925370 PMCID: PMC8674737 DOI: 10.3389/fimmu.2021.790041

- 58. Ke Liu#, Omkar Kulkarni#,, Martin Witteveen-Lane, **Bin Chen\***, Dave Chesla\*, MetBERT: a generalizable and pre-trained deep learning model for the prediction of metastatic cancer from clinical notes, AMIA Annu Symp Proc . 2022 May 23;2022:331-338. PMID: 35854741
- 59. Mengying Sun, Jing Xing, Han Meng, Huijun Wang, **Bin Chen**, Jiayu Zhou, MolSearch: Search-based Multi-objective Molecular Generation and Property Optimization. KDD Health Day 2022 (Best Paper Award)
- 60. Jing Xing,#, Rama Shankar,#, Meehyun Ko,#, Keke Zhang, Sulin Zhang, Aleksandra Drelich, Shreya Paithankar, Eugene Chekalin, Mei-Sze Chua, Surender Rajasekaran, Chien-Te Kent Tseng, Mingyue Zheng, Seungtaek Kim\*, **Bin Chen**\*, Deciphering COVID-19 host transcriptomic complexity and variations for therapeutic discovery against new variants, iScience (Cell publishing group), 2022 Oct 21;25(10):105068. doi: 10.1016/j.isci.2022.105068.

#### **Press**

Repurposing existing drugs to fight new COVID-19 variants (MSU Today release)

- 61. Guisheng Zhao#, Patrick Newbury#, Yukitomo Ishi#, Eugene Chekalin, William Zeng, Benjamin S. Glicksberg, Anita Wen, Shreya Paithakar, Takahiro Sasaki, Amreena Suri, Javad Nazarian, Michael E. Pacold, Theodore Nicolaides, **Bin Chen\***, Rintaro Hashizume\*, Reversal of Cancer Gene Expression Identifies Repurposed Drugs for Diffuse Intrinsic Pontine Glioma, Acta Neuropathologica Communications, volume 10, Article number: 150 2022
- 62. Ke Liu, Martin Witteveen-Lane, Omkar Kulkarni, Benjamin Glicksberg, Dave Chesla\*, **Bin Chen**\*, BGLM: Big data-guided LOINC mapping with multi-language support, JAMIA Open . 2022 Nov 25;5(4):ooac099. doi: 10.1093/jamiaopen/ooac099. eCollection 2022 Dec. PMID: 36448022 PMCID: PMC9696745
- 63. Guoli Zhou, Raina N Fichorova, Claudia Holzman, **Bin Chen**, Chi Chang, Eric P Kasten, Hanne M Hoffmann, Placental circadian lincRNAs and spontaneous preterm birth, Front Genet . 2023 Jan 11;13:1051396. doi: 10.3389/fgene.2022.1051396. eCollection 2022. PMID: 36712876
- 64. Morteza Sarparast, Elham Pourmand, Jennifer Hinman, Derek Vonarx, Tommy Reason, Fan Zhang, Shreya Paithankar, **Bin Chen**, Babak Borhan, Jennifer L Watts, Jamie Alan, Kin Sing Stephen Lee, Dihydroxy-Metabolites of Dihomo-γ-linolenic Acid Drive Ferroptosis-Mediated Neurodegeneration, ACS Cent Sci. 2023 Mar 16;9(5):870-882. doi: 10.1021/acscentsci.3c00052
- 65. Qijun Yi, Jie Wang, Tingting Liu, Yi Yao, Ian Loveless, Kalpana Subedi, Jugmohit Toor, Indra Adrianto, Hua Xiao, **Bin Chen**, Howard Crawford, Deyu Fang, Li Zhou, Qing-Sheng Mi, scRNA-Seq and imaging mass cytometry analyses unveil iNKT cells-mediated anti-tumor immunity in pancreatic cancer liver metastasis, Cancer Lett . 2023 May 1;561:216149. doi: 10.1016/j.canlet.2023.216149. Epub 2023 Mar 27., PMID: 36990268

- 66. Shan-Ju Yeh, Shreya Paithankar, Ruoqiao Chen, Jing Xing, Mengying Sun, Ke Liu, Jiayu Zhou, **Bin Chen\***, TransCell: In silico Characterization of Genomic Landscape and Cellular Responses by Deep Transfer Learning, Genomics, Proteomics and Bioinformatics, https://doi.org/10.1093/gpbjnl/qzad008, 2023
- 67. Ruihua Liu, Shang Su, Jing Xing, Ke Liu, Yawei Zhao, Mary Stangis, Diego P Jacho, Eda D Yildirim-Ayan, Cara M Gatto-Weis, **Bin Chen\***, Xiaohong Li\*, Tumor removal limits prostate cancer cell dissemination in bone and osteoblasts induce cancer cell dormancy through focal adhesion kinase, J Exp Clin Cancer Res, 2023 Oct 11;42(1):264. doi: 10.1186/s13046-023-02849-0. PMID: 37821954 PMCID: PMC10566127
- 68. Mohamed Abdelgied, Katie Uhl, Oliver G Chen, Chad Schultz, Kaylie Tripp, Angela M Peraino, Shreya Paithankar, **Bin Chen**, Maximiliano Tamae Kakazu, Alicia Castillo Bahena, Tara E Jager, Cameron Lawson, Dave W Chesla, Nikolay Pestov, Nikolai N Modyanov, Jeremy Prokop, Richard R Neubig, Bruce D Uhal, Reda E Girgis, Xiaopeng Li, Targeting ATP12A, a Nongastric Proton Pump α Subunit, for Idiopathic Pulmonary Fibrosis Treatment, Am J Respir Cell Mol Biol 2023 Jun;68(6):638-650. doi: 10.1165/rcmb.2022-0264OC. PMID: 36780662 PMCID: PMC10257074
- 69. Katie Uhl, Shreya Paithankar, Dmitry Leshchiner, Tara E Jager, Mohamed Abdelgied, Bhavna Dixit, Raya Marashdeh, Dewen Luo-Li, Kaylie Tripp, Angela M Peraino, Maximiliano Tamae Kakazu, Cameron Lawson, Dave W Chesla, Ningzhi Luo-Li, Edward T Murphy, Jeremy Prokop, **Bin Chen**, Reda E Girgis, Xiaopeng Li, Differential Transcriptomic Signatures of Small Airway Cell Cultures Derived from IPF and COVID-19-Induced Exacerbation of Interstitial Lung Disease, Cells 2023, 12(20), 2501; <a href="https://doi.org/10.3390/cells12202501">https://doi.org/10.3390/cells12202501</a>, PMID: 37887346 PMCID: PMC10605205
- 70. Xiaodan Zhang, Nabasmita Talukdar, Sandeep Vemulapalli, Sumyeong Ahn, Jiankun Wang, Han Meng, Sardar Mehtab Bin Murtaza, Dmitry Leshchiner, Aakash Ajay Dave, Dimitri F. Joseph, Martin Witteveen-Lane, Dave Chesla, Jiayu Zhou, and **Bin Chen\***, Comparison of Prompt Engineering and Fine-Tuning Strategies in Large Language Models in the Classification of Clinical Notes, AMIA 2024 Informatics Summit, PMID: 38370673 PMC10871377
- 71. Xiaodan Zhang, Martin Witteveen-Lane, Christine Skovira, Aakash A. Dave, Jeffrey S Jones, Erin R. McNeely, Michael R. Lawrence, David G. Morgan, Dave Chesla and Bin Chen\*, Incidence and Risk Factors for Mild Cognitive Impairment in West Michigan: A Rural-Urban Comparison Utilizing Electronic Health Records, Alzheimers Dement (N Y), 2024 Aug 12;10(3):e12495. doi: 10.1002/trc2.12495. eCollection 2024 Jul-Sep. PMID: 39135901 PMCID: PMC11317927

#### Press:

\*Mild Cognitive Impairment could be going unreported in rural areas of west Michigan (Science News)

\*Study: Rural Michiganders are being underdiagnosed for cognitive impairment (NPR)

- 72. Evgenii Chekalin, Shreya Paithankar, Rama Shankar, Jing Xing, Wenfeng Xu, **Bin Chen\***, Computational discovery of co-expressed antigens as dual targeting candidates for cancer therapy through bulk, single-cell, and spatial transcriptomics, Bioinform Adv, 2024 Jun 20;4(1):vbae096. doi: 10.1093/bioadv/vbae096, PMID: 39872360 PMCID: PMC11770384
- 73. Ruoqiao Chen, Jiayu Zhou, **Bin Chen**\*, Imputing abundance of over 2500 surface proteins from single-cell transcriptomes with context-agnostic zero-shot deep ensembles, Cell

- Systems, 2024 Sep 4:S2405-4712(24)00236-9. doi: 10.1016/j.cels.2024.08.006. PMID: 39243755 PMCID: PMC11423933
- 74. Han Meng, Ruoqiao Chen, **Bin Chen\***, Jiayu Zhou\*, AnchorDrug: A system for drug-induced gene expression prediction in new contexts through active learning, International Conference on Data Mining (SDM25), https://doi.org/10.1137/1.9781611978520.49
- 75. Haohao Su, Yuesong Wu, **Bin Chen**, Yuehua Cui, STANCE: a unified statistical model to detect cell-type-specific spatially variable genes in spatial transcriptomics, Nat Commun 2025 Feb 20;16(1):1793. doi: 10.1038/s41467-025-57117-w. PMID: 39979358 PMCID: PMC11842841
- 76. Zhiyue Tom Hu, Yaodong Yu, Ruoqiao Chen, Shan-Ju Yeh, **Bin Chen**\*, Haiyan Huang\*, Large-Scale Information Retrieval and Correction of Noisy Pharmacogenomic Datasets through Residual Thresholded Deep Matrix Factorization, Brief Bioinform 2025 May 1;26(3):bbaf226. doi: 10.1093/bib/bbaf226. PMID: 40420482 PMCID: PMC12106859
- 77. Ebenezar Okoyeocha, Natalie Vredevoogd, Shreya Paithankar, Bryan Masino, Poojya Anantharam, Dinesh Goswami, Charlotte Madigan, Megha Suresh, Dodd Sledge, **Bin Chen**, Neera Tewari-Singh, Unveiling the acute toxic pathology and transcriptomic signature of ocular exposure to phosgene oxime using an in vivo mouse model: A novel pilot study, Toxicol Appl Pharmacol, 2025 Sep:502:117438. doi:10.1016/j.taap.2025.117438. PMID: 40505818
- 78. Dylan J. Finneran, Brianna M. Jackman, Taylor Desjarlais, Alayna Henry, Ahlam S. Soliman, Patricia C. Muskus, Rama Shankar, **Bin Chen**, Kevin R. Nash, Dave Morgan, Marcia N. Gordon, Mature tau pathology is not improved by interfering with interleukin-1 receptor signaling in two mouse models of tauopathy, PLoS One, 2025 Nov 5;20(11):e0335409. doi: 10.1371/journal.pone.0335409. eCollection 2025.
- 79. Nabasmita Talukdar, Xiaodan Zhang, Shreya Paithankar, Hui Wang, **Bin Chen**, A survey of using EHR as real-world evidence for discovering and validating new drug indications, Drug Discovery Today, In Press, https://doi.org/10.1016/j.drudis.2025.104552
- 80. Jing Xing#, Mingdian Tan#, Dmitry Leshchiner#, Mengying Sun#, Mohamed Abdelgied#, Li Huang, Shreya Paithankar, Katie Uhl, Rama Shankar, Erika Lisabeth, Bilal Aleiwi, Tara Jager, Cameron Lawson, Reda Girgis, Richard R. Neubig, Samuel So, Edmund Ellsworth, Xiaopeng Li\*, Mei-Sze Chua\*, Jiayu Zhou\*, **Bin Chen**\*, Deep learning-based screening and design of novel therapeutics that reverse disease-associated transcriptional phenotypes, Cell, Accepted

#### NON-PEER REVIEWED PUBLICATIONS

- 1. **Chen B.**, Wang H., Ding Y., Wild D., Semantic Breakthrough in Drug Discovery, Morgan & Claypool Publishers, 2014 (Book)
- 2. Sirota M., **Chen B**. Translational Bioinformatics in Drug Discovery, ACM's student magazine XRDS, The ACM Magazine for Students 21 (4), 28-33
- 3. **Chen B**. Ten Simple Rules for Internship in a Pharmaceutical Company. PLoS computational biology. 2014;10(5):e1003600.

# **UNPUBLISHED MANUSCRIPTS (only as a co-corresponding author)**

1. Rama Shankar#, Mingdian Tan#, Yueqi Zhang, Benjamin Green, Joseph W. Zagorski, Austin J. Goodyke, Shreya Paithankar, Ruoqiao Chen, Nabasmita Talukdar, Marie Adams, Galen Hostetter, Rebecca A. Siwicki, Sydney Hein, Doris Yang, Li Zhou, Qing-Sheng Mi, Nina Steele, Tara Ghaziani, Renumathy Dhanasekaran, Dave Chesla, Xin Chen, Hua Xiao, Samuel So, Mei-Sze Chua, **Bin Chen\***, Mapping Cellular Progression of Liver Diseases Reveals the Pro-Tumorigenic Role of yδ2 T Cells, Nature Cell Biology, under revision

- 2. Ke Liu#, Mingdian Tan#, Rama Shankar, Ruoqiao Chen, Shreya Paithankar, Dmitry Leshchiner, Nabasmita Talukdar, Dimitri Joseph, Benjamin S. Glicksberg, Samuel So, Mei-Sze Chua\*, **Bin Chen**\*, Deciphering Liver Metastases with Pan-Cancer Transcriptomics, Nature Communications, under revision
- Rama Shankar, Austin W. Goodyke, Shubham Koirala, Shreya Paithankar, Ruoqiao Chen, Nicholas L. Hartog, Dave Chesla, Surender Rajasekaran\*, and **Bin Chen,**\* Characterizing immuno-biology at clinical recognition of early multiple organ dysfunction syndrome in pediatric patients using single cell transcriptomics, under submission <a href="https://doi.org/10.1101/2025.01.02.630924">https://doi.org/10.1101/2025.01.02.630924</a>
- 4. Paithankar, S.#, Zhang, X.#, Murtaza, S.#, Pu, J., Shankar, R., Leshchiner, D., Tang, J., Dai, X., Xie, Y., Li, X., **Chen, B**. Massive labeled transcriptomics as a resource of transcriptome representation learning, KDD, under review