

CURRICULUM VITAE

Lu Chen, PhD

Luchenlab.org

Revised April 2024

PERSONAL

HOME ADDRESS: 1105 Miles Court, Cheltenham, PA 19012
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BUSINESS ADDRESS: 333 Cottman Ave, W246, Philadelphia, PA 19111
BUSINESS TELEPHONE: 215-728-5635
CITIZENSHIP STATUS: Permanent resident, USA

EDUCATION AND TRAINING: (Chronological order)

SCHOOL	DATES	DEGREE/YR/SUBJECT
Wuhan University	August 2002- June 2006	BS 2006, Biological Sciences
Laboratory of <i>Joan and Ronald Conaways</i> Dept of Biochemistry and Molecular Biology University of Kansas Medical Center/ Stowers Institute for Medical Research	August 2007- Nov 2013	PhD 2013, Biochemistry

POSTDOCTORAL FELLOWSHIP EXPERIENCE

Laboratory of <i>Steven Artandi</i> , Stanford University, Stanford, CA RNA mechanism of telomerase ribonucleoprotein	Nov 2013 – Nov 2019
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ACADEMIC HONORS AND AWARDS

NIGMS-MIRA (Maximizing Investigators' Research Award)	July 2023,
Career-transition Fellowship Award, Stanford Cancer Institute, Stanford, CA	July 1, 2018,
Honors in Ph.D. thesis and defense Department of Biochemistry and Molecular Biology University of Kansas Medical Center, Kansas City, KS	Sept 10, 2013,
Honorable Mention of Poster Presentation	Mar 28-29, 2011

6th Annual Young Investigator Research Day
Stowers Institute for Medical Research, Kansas City, MO

Best Poster Award at the ASBMB Sept 30- Oct 04, 2010
(*American Society for Biochemistry and Molecular Biology*)
Special Symposium, entitled “Transcriptional Regulation by Chromatin and RNA Polymerase II”, Tahoe City, CA

APPOINTMENTS (Chronological order)

ACADEMIC

Instructor, Stanford Cancer Institute, Stanford University Nov 2020 – Sept 2021
Assistant Professor, Fox Chase Cancer Center Sept 2021- current

TEACHING AND MENTORING ACTIVITIES

DOCTORAL COMMITTEE

PhD Committee Chair, Julia Hoopman, Lewis Katz School of Medicine at Temple University, Chen Lab
PhD Committee Chair, Alex Morris, Lewis Katz School of Medicine at Temple University, Chen Lab
PhD Committee, David Glass, Lewis Katz School of Medicine at Temple University, Neil Johnson lab
PhD Committee, Madison Honer, Lewis Katz School of Medicine at Temple University, Whetstone lab

POST-DOCTORAL FELLOWS AND OTHER SCIENTISTS SUPERVISED (23 in total)

Physician Scientists

Dina Loffe, MD 2023-current
Clinical Star grant
Next Position: Assistant Professor, FCCC

Ivy Trans 2024-current
MD/PhD 1st year student

Postdoctoral Fellows

Dr. Musinu Zakari 2022-current
Ph.D. Paris VI University, France
2023-2025 Patterson Postdoctoral Fellowship in Structural Biology and Biochemistry

Dr. Aldana Vistarop 2023-current
Ph.D. University of Buenos Aires, Argentina

Dr. Soon-keat Ooi 2021-2022
Ph.D. Stowers Institute for Medical Research, Kansas City, MO

Next position: Postdoc, University of Pennsylvania, Philadelphia, PA

Graduate Students

Julia Hoopman

PhD Student (Temple-BMSC 2022) 2023-current
2022- Presidential Fellowship, Temple University
2023- T32 Predoctoral Training Award, NIGMS

Alexander Morris

PhD Student (Temple-BMSC 2022) 2023-current
Co-author: Cancer Discovery, 2024

Grigory Matveev

Master Student (Moscow Institute of Physics and Technology - MIPT, Russia) 2023-current

Emily Pochet

Rotation Student (Drexel University 2023) 2024-current

Olorumfemi Ayeotan

Rotation Student (Temple-BMSC 2023) 2024-current

John Crespo

Rotation Student (Temple-BMSC 2023) 2023

Undergraduate Students

Marie Kobin

Jeanne E. and Robert F. Ozols Undergraduate Summer Research Fellowship 2022-2023
Co-author: NAR, 2022
Next position: BS in biochemistry, Cornell University, Ithaca, NY

Cameron Lian

BS in biochemistry, Grinnell College, Grinnell, IA 2022-current

Zihan Chu

Fox Chase BS-to-PhD (FCB2P 2023-2024) 2024-current
Zhejiang-Edinburgh Institute
Next Position: PhD program, UIUC

Abby Fowler

FCCC-UD Summer Research Fellow 2023 2023
Next Position: REU, Texas State University

Victoria Gillespie

B.S. University of North Carolina at Chapel Hill 2021-2022
Co-author: Nature, 2024
Next position: incoming graduate student from fall 2024.

Rachana Thang Temple University	2022-2023
Elizabeth Urbanowicz Temple University	2022
Kevin Ethridge Wistar-BTT program	2022
<u>High School Students</u> Emily Gerstein Central Buck School-West Co-author: Cancer Discovery, 2024 Next position: undergraduate, Emory University	2023-current
Arushi Vignesh TRIP-initiative graduate Conestoga High School	2023-current
Amal Oubbari Central High School 1 st prize in the 45 th George Washington Carver Science Fair Next position: undergraduate, University of Pennsylvania	2023-current
Ashley Park Wissahickon High School Next position: undergraduate, University of Pennsylvania	2022-2023

TEACHING

Responsible Conduct of Research (RCR): data fabrication, Fox Chase Cancer Center	2021
Host, Steppingstone Scholars - underserved Philadelphia high schoolers	2022
Host, The Franklin Institute, Youth Program	2022
UD-Fox Chase Scholar seminar: how to use a digital notebook, Fox Chase Cancer Center	2022
“How-To” series: job search for a faculty job, Fox Chase Cancer Center	2022
“How-To” series: efficient scientific presentation, Fox Chase Cancer Center	2023
BMSC#8503, Genetics and Epigenetics, Lewis Katz School of Medicine at Temple University	2024
Biology 3368/5466, Cancer Biology, College of Science and Technology at Temple University	2024

PROFESSIONAL SERVICES

EDITORIAL SERVICE

Ad hoc Reviewer
- <i>Life Science Alliance,</i>
- <i>eLife,</i>
- <i>Biochemical Society Transactions,</i>
- <i>Bioscience Reports,</i>
- <i>Molecular Cancer Therapeutics</i>
- <i>Star Protocols (cell press)</i>

- *Protein Expression and Purification*
- *Journal of Biological Chemistry*
- 2017- Peer Review Board member, *Journal of Visualized Experiments*
- 2017- Scientific Editor and Editorial Board member, *Cancer Translational Medicine*

Grant Reviewer

- 2024 AHA 2024 IPA Basic Cell Sciences Peer Review Committee.
- 2024 FCCC-Nuclear Dynamics and Cancer program seed grant.
- 2023 FCCC-Multi-PI NCI funding seed grant.

COMMITTEE SERVICE

- 2023- Director, FCB2P scholar program (Fox Chase Bachelor-to-PhD)
- 2023 Cancer Epigenetics Institute Faculty Search Committee
- 2021 Workgroup/Committee in Bioinformatics, Fox Chase Cancer Center
- 2021 Workgroup/Committee in Cancer Aging Institute, Fox Chase Cancer Center

MEETINGS AND PRESENTATIONS

- 2023 Aug 31 Hematology Division, Department of Medicine, Washington University in St. Louis, MO
- 2023 May 2 The 12th Cold Spring Harbor Meeting on “Telomere and Telomerase”, **CSHL**, New York, NY
- 2023 Feb 13 Dept of BMB, Drexel University College of Medicine, Philadelphia, PA
- 2022 May 9 Fels Cancer Institute, Lewis Katz School of Medicine, Temple University, Philadelphia, PA
- 2022 April 7 Sylvester Comprehensive Cancer Center, University of Miami, Miami, FL
- 2021 Nov 11 Department of Mechanical Engineering, Rochester Institute of Technology, Rochester, NY
- 2019 Jun 26 Tsinghua University, Beijing, China
- 2019 Apr 29 Shanghai Inst. of Biochemistry and Cell Biology, Chinese Academy of Sciences, Shanghai
- 2019 Apr 18 Peking University, Beijing, China
- 2018 Aug 7 LCB seminar series, NIH/National Cancer Institute/Center for Cancer Research (**NCI/CCR**), Bethesda, MD
- 2018 May 4 European Molecular Biology Organization (**EMBO**) workshop on “Telomere Biology in Human Diseases”, Tróia, Portugal
- 2017 May 2 The 10th Cold Spring Harbor meeting on “Telomeres and Telomerase”, **CSHL**, New York, NY
- 2017 Mar 31 The 1st Annual Chromosome Dynamics and Genome Maintenance Symposium, Stanford University, Stanford, CA
- 2010 Jan 16 Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, Beijing

PUBLICATIONS:

1. Hasegawa K, Zhao Y, Garbuzov A, Corces MR, Gillespie V, Cheung P, Wei Y, Chang HY, Chen L, Artandi SE. Clonal inactivation of telomerase promotes accelerated stem cell differentiation. **Nature**, 2024, *in press*.
2. Murayama T, Nakayama J, Jiang X, Miyata, K, Morris AD, Cai QK, Prasad RM, Ma X, Efimov A, Belani N, Gerstein ER, Tan Y, Zhou Y, Kim JW, Maruyama R, Campbell KS, Chen L, Yang Y, Balachandran S, Canadas I. Targeting DHX9 triggers tumor-intrinsic interferon response and replication stress in Small Cell Lung Cancer. **Cancer Discovery**, 2024, Jan 8. PMID: 38189443

3. Huda A, Arakawa H, Mazzucco G, Galli M, Petrocelli V, Casola S, Chen L, Dokhani Y. The Telomerase reverse transcriptase elongates reversed replication forks at telomeric repeats. **Science Advance**, 2023 Mar 22;9(12):eadf2011. PMID: 36947627
4. Chen L*†, Roake CM†, Maccallini P, Bavasso F, Dehghassasiri R, Santonicola P, Mendoza-Ferreira N, Satolini L, Rizzuti L, Esposito A, ..., Kobin MA, Salzman J, Pellizzoni L, Wirth B, Di Schiavi, E, Gatti M, Artandi SE*, Raffa GD*. TGS1 controls snRNA 3' end processing, prevents neurodegeneration and ameliorates SMN-dependent neurological phenotypes in vivo. **Nucleic Acids Research** 2022 Aug 10 (*co-corresponding author) doi.org/10.1093/nar/gkac659
5. Chen L*, Chang HY, and Artandi SE. Analysis of RNA conformation in endogenously assembled RNPs by icSHAPE. **STAR Protocols** 2021, 2 (2), 100477 (*co-corresponding author)
6. Chen L*, Bellone RR, Wang Y, Singer-Berk M, Ford JM, Artandi SE. A novel DDB2 mutation causes defective recognition of UV-induced DNA damages and prevalent equine squamous cell carcinoma. **DNA Repair** 2020 Nov 12: 103022 (* corresponding author)
7. Chen L, Roake CM, Galati A, Bavasso F, Saggio I, Schoeftner S, Cacchione S, Gatti, M, Artandi SE*, Raffa GD*. Loss of Human TGS1 Hypermethylase Promotes Increased Telomerase RNA and Telomere Elongation. **Cell Reports** 2020 Feb 04; 30: 1358-1272 (*Highlighted in BioArt, 2020 Feb 08*)
8. Chen L, Roake CM, Freund A, Batista PJ, Tian S, Yin, YA, Gajera C, Lin S, Lee B, Pech M, Venteicher AS, Das R, Chang HY, Artandi SE. An activity switch in human telomerase dependent on RNA conformation and shaped by TCAB1. **Cell**. 2018 Jun 28;174(1):218-230.e13.
9. Chen L, Conaway RC, Conaway JW. Multiple modes of regulation of the human Ino80 SNF2 ATPase by subunits of the INO80 chromatin-remodeling complex. **Proc. Natl. Acad. Sci. U.S.A.** 2013 Dec 17; 110 (51):20497-20502.
10. Chen L, Cai Y, Jin J, Florens L, Swanson SK, Washburn MP, Conaway JW, Conaway RC. Subunit organization of the human INO80 chromatin remodeling complex: an evolutionarily conserved core complex catalyzes ATP-dependent nucleosome remodeling. **Journal of Biological Chemistry**. 2011; 286:11283-11289. (*Highlighted in "Milestones in transcription and chromatin published in the Journal of Biological Chemistry", 2019 Feb 1;294(5):1652-1660.*)
11. Chen L, Ooi SK, Conaway RC, Conaway JW. Generation and purification of human INO80 chromatin remodeling complexes and subcomplexes. **Journal of Visualized Experiments**. 2014 Oct 23;(92). doi: 10.3791/51720.
12. Chen L, Ooi SK, Conaway RC, Conaway JW. Biochemical assays for analyzing activities of INO80 chromatin remodeling enzymes. **Journal of Visualized Experiments**. 2014 Oct 25;(92). doi: 10.3791/51721.
13. Roake CM, Chen L, Chakravarthy A, Raffa G, Artandi SE. Disruption of Telomerase RNA Maturation Kinetics Precipitates Disease. **Molecular Cell**. 2019 May 16;74(4):688-700.e3.
14. Lin S, Nascimento EM, Gajera C, Chen L, Neuhoefer P, Garbuzov A, Wang S, Artandi SE. Distributed hepatocytes expressing telomerase repopulate the liver in homeostasis and injury. **Nature**. 2018 Apr;556(7700):244-248. (Comment in **Nature**. 2018 Apr;556(7700):181-182; *Nat Rev Gastroenterol*

- Hepatol.* 2018 Jun;15(6):328; *Transplantation.* 2018 Oct;102(10):1587-1588; *Arch Toxicol.* 2019 Dec;93(12):3633-3634.)
15. Vaidyanathan S, Baik R, Chen L, Bravo DT, Suarez CJ, Abazari SM, Salabudeen AA, Dudek AM, Teran CA, Davis TH, Lee CM, Bao G, Randell SH, Artandi SE, Wine JJ, Kuo CJ, Desai TJ, Nayak JV, Sellers ZM, Porteus MH. Targeted replacement of full-length CFTR in human airway stem cells by CRISPR/Cas9 for pan-mutation correction in the endogenous locus. *Molecular Therapy* 2021 Mar 29;S1525-0016(21)00152-0.
 16. Galati A, Micheli E, Bavasso, F, Cicconi A, Maccallini P, Scatolini L, Chen L, Roake C, Schoeftner S, Artandi SE, Gatti M, Cacchione S, Raffa GD. The S-adenosylmethionine analog Sinefungin inhibits the trimethylguanosine synthase TGS1 to promote telomerase activity and telomere lengthening. *FEBS Letter* 2022 Jan;596(1):42-52.
 17. Chen J, Chen L, Wang G, Tang H. Cholesterol-Dependent and -Independent CD40 Internalization and Signaling Activation in Cardiovascular Endothelial Cells. *Arteriosclerosis Thrombosis and Vascular Biology.* 2007;27(9):2005-13.
 18. Sela D, Chen L, Martin-Brown S, Washburn MP, Florens L, Conaway JW, Conaway RC. Endoplasmic reticulum stress-responsive transcription factor ATF6 α directs recruitment of the Mediator of RNA polymerase II transcription and multiple histone acetyltransferase complexes. *Journal of Biological Chemistry.* 2012 Jun 29; 287(27):23035-45.
 19. Wang L, Limbo O, Fei J, Chen L, Kim B, Luo J, Chong J, Conaway RC, Conaway JW, Ranish JA, Kadonaga JT, Russell P, Wang D. Regulation of the Rhp26ERCC6/CSB Chromatin Remodeler by a Novel Conserved Leucine Latch Motif. *Proc. Natl. Acad. Sci. U.S.A.* 2014 Dec 30;111(52):18566-71.
 20. Sela D, Conkright JJ, Chen L, Gilmore J, Washburn MP, Florens L, Conaway RC, Conaway JW. Role for human mediator subunit MED25 in recruitment of mediator to promoters by endoplasmic reticulum stress-responsive transcription factor ATF6 α . *Journal of Biological Chemistry.* 2013 Sep 6; 288(36):26179-87.

RESEARCH GRANT SUPPORT

NIH/NIAID

R21 AI164333

May 02, 2022 – April 30, 2024

Defining role of Long non-coding RNA (LncRNA) GM15417 in iNKT development and subset differentiation.

Role: co-Investigator

Total Direct Costs \$106,000

NIH/NIGMS

R35 GM150538

July 02, 2023 – May 31, 2028

Telomerase RNP Prisonbreaks from Phase-Separated Nuclear Body

Role: Prime PI

Total Direct Costs \$1,250,000

NIH/NCI

3R01CA269660-02S1

06/01/2023-05/31/2027

Role: co-Investigator

Pancreatic Cancer-Associated Fibroblasts: Function, Detection, and Regulation