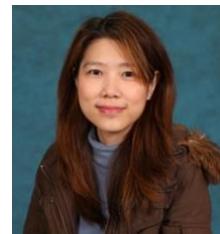


# **Pattrra Chun-on, MD, MPH, PhD**

**Division of Hematology and Oncology, Stem Cell Program**

**Boston Children's Hospital, Dana-Faber Cancer Institute**



**Harvard Medical School**

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## **EDUCATION**

**May 2006:** Doctor of Medicine (MD), Faculty of Medicine Siriraj Hospital, Mahidol University Bangkok, Thailand

**May 2013:** Internal Medicine Residency Program, The Royal College of Physicians of Thailand (RCPT) Bangkok, Thailand

**April 2018:** Master Degree of Public Health (MPH) and Certificate in Environmental Health Risk Assessment, Environmental and Occupational Health Department, Graduate School of Public Health, University of Pittsburgh, Pennsylvania USA

**August 2018-April 2023:** PhD Program of Environmental and Occupational Health Department, Graduate School of Public Health, University of Pittsburgh, Pennsylvania USA studied Cell Biology, Telomere Biology, Cancer Biology, supervisor: Jonathan K Alder, PhD

**August 2023-Now:** Postdoctoral Research Fellow (T32) in Division of Hematology and Oncology, Stem Cell Program, Boston Children's Hospital, Boston, MA USA studying Cell Biology, Telomere Biology, Aplastic Anemia, Blood Disorders, Bone Marrow Failure and Myelodysplastic Syndrome Program, Cancer and Blood Disorders, Hematopoietic (Stem) Cell Transplant Program, supervisor: Suneet Agarwal, MD, PhD

## **MEDICAL EXPERIENCE**

**May 2006 – April 2008:** General Practice Doctor at Royal Irrigation Hospital, Thailand

**May 2011 – April 2013:** Internal Medicine Residency Program at Bhumibol Hospital, Bangkok, Thailand

**July 2013 – July 2016:** Internal Medicine Practice at Chulabhorn Cancer Center (CCC) Bangkok, Thailand

**Chief of general medical doctor unit:** Responsibilities included management of job description, acute and chronic patients in medicinal diseases, pre- and post-operative evaluate and management **Chief of Occupational health environment and safety:** Responsibilities included occupational health care and safety of healthcare workers in Chulabhorn Cancer center including annual health check-up, acute and chronic illness, providing plans of fires and disasters, providing vaccine prophylactic courses and counseling of healthcare related illness.

**2016 – 2023:** Faculty of Medicine and Public Health, Princess Srisavangavadhana College of Medicine, Chulabhorn Royal Academy: Bangkok, Thailand

**2023-Now:** Postdoctoral Research Fellow, Division of Hematology and Oncology, Stem Cell Program, Boston Children's Hospital, Boston, MA USA

### **MEDICAL VOLUNTEER EXPERIENCE**

1. Candidate in Princess Mother's Medical Volunteer (PMMV) of Thailand (Medical volunteer mobile unit to remote areas to visit villagers and army personnel)
2. Volunteer in the Mass Vaccination Clinical Volunteers as a part of the Pitt COVID-19 Vaccination Clinic in partnership with the Allegheny County Health Department on March 22, 2021

### **LEADERSHIP OPPORTUNITIES**

#### **1. The GSPH Doctoral Student Organization (DSO) board member**

On duty during 2018-2019 school year

Mission Statement: The University of Pittsburgh Graduate School of Public Health's Doctoral Student Organization (DSO) is a resource for students in the doctoral program.

The aim of the DSO is to bring students together by providing opportunities to network and encouraging discussions about interests, challenges, and issues.

Responsibilities:

- Organize and monitor the match program
- Organize fun socializing events for doctoral students
- Provide support, as needed, to the Office of Student Affairs

#### **2. Project Leader of Stanton Heights Neighborhood Association**

Mission Statement: Volunteers will be picking up litter and beautifying the community throughout Stanton Heights. October 22<sup>th</sup>, 2022 from 8:00 AM - 3:00 PM

### **RESEARCH AND PUBLICATIONS**

1. Ungtrakul T, Mahidol C, **Chun-On P**, Laohapand C, Siripongsakun S, Worakitsitisorn A, Vidhayakorn S, Boonchuay W, Dechma J, Sornsamrang G, Soonklang K, Sriprayoon T, Tanwandee T, Auewarakul CU. **Hepatocellular carcinoma screening and surveillance in 2293 chronic hepatitis B patients in an endemic area**. *World J Gastroenterol*. 2016 Sep 14;22(34):7806-12. doi: 10.3748/wjg.v22.i34.7806. PMID: 27678364; PMCID: PMC5016381.
2. Sriprayoon, T., Mahidol, C., Ungtrakul, T., **Chun-on, P.**, Soonklang, K., Pongpun, W., Laohapand, C., Dechma, J., Pothijaroen, C., Auewarakul, C., and Tanwandee, T. **Efficacy and safety of entecavir versus tenofovir treatment in chronic hepatitis B patients: A randomized controlled trial**. *Hepatol Res* 2017 Mar;47(3): E161–E168. doi: 10.1111/hepr.12743. Epub 2016 Jun 8. PMID: 27176630
3. Jiang M, Roth MG, **Chun-On P**, Sullivan DI, Alder JK. **Phenotypic diversity caused by differential expression of SFTPC-cre–transgenic alleles**. *American journal of respiratory*

*cell and molecular biology*. 2020 Jun;62(6):692-8. DOI: 10.1165/rcmb.2019-0416MA. PMID: 32208105

4. **Chun-On P**, Hinchie AM, Beale HC, Gil Silva AA, Rush E, Sander C, Connelly CJ, Seynnaeve BK, Kirkwood JM, Vaske OM, Greider CW. **TPP1 promoter mutations cooperate with TERT promoter mutations to lengthen telomeres in melanoma**. *Science*. 2022 Nov 11;378(6620):664-8. doi: 10.1126/science.abq0607. Epub 2022 Nov 10. PMID: 36356143; PMCID: PMC10590476.
5. Hinchie AM, Sanford SL, Loughridge KE, Sutton RM, Parikh AH, Gil Silva AA, Sullivan DI, **Chun-On P**, Morrell MR, McDyer JF, Opresko PL. **A persistent variant telomere sequence in a human pedigree**. *Nature Communications*. 2024 Jun 1;15(1):4681. doi: 10.1038/s41467-024-49072-9. PMID: 38824190; PMCID: PMC11144197.
6. Kvarnung M, Pettersson M, **Chun-on P<sup>1</sup>**, Rafati M, McReynolds LJ, Norberg A, Moura PL, Pesonen I, Chaireti R, Söderholm BG, Burlin J. **Identification of biallelic POLA2 variants in two families with an autosomal recessive telomere biology disorder**. *European Journal of Human Genetics*. 2024 Nov 30;33(5):580. doi: 10.1038/s41431-024-01722-8. Epub 2024 Nov 30. PMID: 39616267; PMCID: PMC12048608.

## **MASTER OF PUBLIC HEALTH ESSAY**

### ***“Limiting the Occupational Exposure to Aflatoxin in Thailand”***

MPH Degree Advisor: James Peterson, PhD Associate Professor, Environmental and Occupational Health, Graduate School of Public Health, University of Pittsburgh

MPH Degree Committee: Sally Wenzel, MD Department Chair, Environmental and Occupational Health Director, University of Pittsburgh Asthma Institute at UPMC/UPSM

## **CERTIFICATE**

1. The Certificate in Environmental Health Risk Assessment, Date of Completion; April 28, 2018, The University of Pittsburgh Graduate School of Public Health
2. COI PHS Regulated Course 1 - Basic Course, Completion Date: 19 Mar 2019, Expiration Date: 18 Mar 2023, Completion Record ID: 30975646
3. Bloodborne Pathogen Training Update, Date of Completion; March 20, 2019, Certificate ID 798647, renewed May 10 2021, Certificate ID 870763, The University of Pittsburgh
4. Chemical Hygiene Training Update, Date of Completion; March 20, 2019, Certificate ID 798649, The University of Pittsburgh
5. Purpose Bred Mice and Rats, Date of Completion; March 20, 2019, Certificate ID 798660, The University of Pittsburgh
6. Use of Laboratory Animals in Research and Education, Date of Completion; March 20, 2019, Certificate ID 798659, The University of Pittsburgh

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<sup>1</sup> First Co-author

7. Biosafety – NIH Guidelines, Completed the Internet-Based Educational Module, May 12, 2020
8. Continuing Medical Education Statement Of Credit, Navigating the Complexities of Biomarker Testing in the Expanding Field of Precision Immuno-Oncology: Latest Evidence, Current Challenges, and Practical Guidance for Pathologists, as an Internet-based activity on October 27, 2020 and is awarded 1.0 AMA PRA Category 1 Credit(s)™
9. American Thoracic Society, ATS Covid-19 Critical Care Training Forum, Certificate of Attendance: August 18, 2020, August 25, 2020, September 1, 2020, September 8, 2020
10. American Thoracic Society, Science & Innovation Center Webinar Series, Certificate of Attendance: September 12, 2020
11. Telomeres & Telomerase (Virtual) Conference, Certificate of Attendance: December 14, 2021 to December 17, 2021
12. CSHL Fall 2022 The Genome Access Course, Certificate of Attendance: November 14-16, 2022

### **GRANT AND FUNDING**

1. "The Scholarship in Commemoration of HM King Bhumibol Adulyadej's 90<sup>th</sup> Birthday Anniversary" A full funding from HRH Princess Chulabhorn College of Medical Science. This grant covers tuition fees, monthly allowance and all expenses required during MPH program in the Environmental and Occupational Health and Ph.D. program in the Toxicogenomic, Graduate School of Public Health, The University of Pittsburgh, from August 2016 to August 2023.
2. Joint Program in Transfusion Medicine at the Longwood Campus of Harvard Medical School T32 Training Grant, "Transfusion Biology and Cellular Therapies"  
NIH 2T32HL066987-21, Appointment 11/01/2023 - 10/31/2024  
NIH 5T32HL066987-22, Appointment 11/01/2024 - 10/31/2025  
NIH 5T32HL066987-23, Appointment 11/01/2025 - 10/31/2026

### **PH.D. DISSERTATION**

***"Recurrent TPP1 promoter mutations drive telomere maintenance in melanoma"***

### **SPEAKER**

- February 17<sup>th</sup>, 2021: University of Pittsburgh and UPMC Hillman Cancer Center Genome Stability Program Work in Progress (WIP) presentation title ***"Recurrent TPP1 promoter mutations as a potential driver of telomere maintenance in melanoma"***
- August 28<sup>th</sup>, 2021: 8<sup>th</sup> Health Challenge Thailand Academic Conference (HCT 2021) August 28<sup>th</sup>-29<sup>th</sup>, 2021: abstract has been selected for 15-minute oral presentation title ***"The novel mechanism of telomere maintenance in melanoma"***

- November 10<sup>th</sup>, 2021 University of Pittsburgh and UPMC Hillman Cancer Center Genome Stability Program Work in Progress (WIP) presentation title "***Understanding telomere maintenance mechanism in melanoma***".
- November 4<sup>th</sup>, 2021 Spotlight on EOH Graduate Student Research Presentation title "***A better understanding of telomere maintenance mechanism in melanoma***."
- June 21<sup>st</sup>, 2022, Genome Stability Program Mini-Symposium: abstract has been selected for 20-minute oral presentation title "***TPP1 promoter mutations synergize with TERT promoter mutations to lengthen telomeres in melanoma***."
- November 9<sup>th</sup>, 2022 University of Pittsburgh and UPMC Hillman Cancer Center Genome Stability Program Work in Progress (WIP) presentation title "***Recurrent somatic mutations in TPP1 promoter induce telomere lengthening in melanoma***."
- January 27<sup>th</sup>, 2023, EOH Student Special Seminar highlight the students' accomplishment 2-hour oral presentation and discussion forum title "***A novel mechanism of telomere length maintenance in cancer***"
- October 31<sup>st</sup>, 2024, Hematology/Oncology Floor Meeting presentation title "***POLA2 Missense Variants in Telomere Biology Disorder***"

### **POSTER PRESENTATION DURING PH.D. PROGRAM**

1. Abstract Title: "***Recurrent TPP1 promoter mutations as a potential driver of telomere maintenance in melanoma***"

Authors: Pattra Chun-on M.D., MPH; Angela M. Hinchie; Daniel I. Sullivan M.D.; Agustin A. Gil Silva; Harinath Bahudhanapati Ph.D.; Elizabeth Rush BS; Cindy Sander; John M. Kirkwood M.D.; Carla J. Connelly; Carol W. Greider Ph.D.; Jonathan K. Alder Ph.D.

Events: Presented in the Research Day 2021 Accelevents Virtual Event Platform

Day/Date of Presentation: Tuesday, April 27, 2021

Place: Poster Hall

Event: Dean's Day 2021 —Pitt Public Health's annual showcase of student research

Day/Date of Presentation: Session III: Tuesday, April 6, 9-11 a.m.

Place: Virtual Poster, YouTube Video Poster Presentation Link: <https://youtu.be/bL8oiCP4aqU>

2. Abstract Title: "***Prevalence and implications of TERT promoter mutation and TPP1 promoter mutation in cutaneous melanoma***"

Authors: Pattra Chun-on, Angela M. Hinchie, Agustin Alejandro Gil Silva, Carla J. Connelly, John M. Kirkwood, Carol W. Greider, Jonathan K. Alder

Event: Presented in Dean's Day—Pitt Public Health's annual showcase of student research

Day/Date of Presentation: Session I: Tuesday, April 5<sup>th</sup>, 2022, 9-11 a.m.

Place: Pitt Public Health

3. Abstract Title: "***Synergistic effects of TPP1 promoter mutations and TERT promoter mutations on telomere maintenance and immortalization in melanoma***"

Authors: Pattra Chun-on, Angela M. Hinchie, Holly C. Beale, Agustin A. Gil Silva, Elizabeth Rush, Cindy Sander, Carla J. Connelly, Brittani K.N. Seynnaeve, John M. Kirkwood, Olena M. Vaske, Carol W. Greider, and Jonathan K. Alder

Event: Cell Bio 2022—an ASCB|EMBO meeting in Washington DC, from December 3<sup>rd</sup> -7<sup>th</sup>, 2022

Poster Session Title: Oncogenes and Tumour Suppressors - Gene regulation

Day/Date of Presentation: Monday, December 5<sup>th</sup>, 2022

Place: Exhibit Hall AB at the Walter E. Washington Convention Center

## **AWARD**

### ***“The Second Runner-up of Research Presentation in Biochemistry and Molecular Biology”***

Issued by 8<sup>th</sup> Health Challenge Thailand Academic Conference (HCT 2021) August 28<sup>th</sup>-29<sup>th</sup>, 2021

### ***“Delta Omega Dissertation Award”***

Delta Omega Dissertation Award issued by Office of Student Affairs, associated with EOH department, School of Public Health, University of Pittsburgh, April 2023

## **PUBLIC COMMUNICATIONS AND INTERVIEWS**

1. Interview with Pitt researchers, Jonathan Alder and Pattra Chun-on, for study on melanoma telomere genes interviewed by Allison Hydzik and Hayley Lynn Rein  
***“Making Melanoma Immortal: Pitt Scientists Discover Key Genetic Step in Cancer’s Race to Live Forever”*** Published: November 10, 2022  
<https://inside.upmc.com/making-melanoma-immortal-pitt-scientists-discover-key-genetic-step-in-cancers-race-to-live-forever/>
2. The conversation online article ***“How cancer cells can become immortal -new research finds a mutated gene that helps melanoma defeat the normal limits on repeated replication”*** Published: November 10, 2022, Authors: Jonathan Alder and Pattra Chun-on  
<https://theconversation.com/how-cancer-cells-can-become-immortal-new-research-finds-a-mutated-gene-that-helps-melanoma-defeat-the-normal-limits-on-repeated-replication-194234>
3. WTAE-TV interview with Pitt researchers, Patricia Opresko and Pattra Chun-on  
***“Researchers say they’ve made major advance in fighting melanoma”*** Updated: November 15, 2022  
<https://www.wtae.com/article/melanoma-fight-university-of-pittsburgh/41970747#>
4. ***“The Long Game”*** Pitt Med Magazine Spring 2023 Article by Jonathan Alder, Patricia Opresko, John Kirkwood, and Pattra Chun-on  
<https://www.pittmed.pitt.edu/news/telomere-melanoma-immortality-jonathan-alder-pattra-chun-on>

## **PhD ADVISOR**

### **Jonathan K Alder, PhD**

Associate Professor of Medicine, Division of Pulmonary, Allergy, and Critical Care Medicine Division, Department of Medicine, School of Medicine, University of Pittsburgh

UPMC Montefiore Hospital 3459 Fifth Avenue, NW628, Pittsburgh, PA 15213

E-mail: [jalder@pitt.edu](mailto:jalder@pitt.edu) Primary Phone: 412-624-7441 Fax: 412-624-1670

**POSTDOCTORAL ADVISOR**

**Suneet Agarwal, MD, PhD**

Co-Program Leader for the Stem Cell Transplant Center, Dana-Farber/Boston Children's Cancer and Blood Disorders Center

Associate Professor of Pediatrics, Harvard Medical School

Dana-Farber/Boston Children's Cancer and Blood Disorders Center 450 Brookline Avenue, Boston, Massachusetts 02115

**E-mail:** [suneet.agarwal@childrens.harvard.edu](mailto:suneet.agarwal@childrens.harvard.edu) **Phone:** 617-919-4610