

# CURRICULUM VITAE

## Purab Pal, Ph.D.

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### 1. PERSONAL INFORMATION

**Current Title:** Postdoctoral Research Associate  
Department of Physiology and Biophysics  
University of Illinois Chicago.  
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### 2. EDUCATION

<b>2020</b>	Doctorate (Ph.D.)	Physiology	Southern Illinois University, Carbondale, U.S.A.
<b>2013</b>	Post-baccalaureate (M.Sc.)	Neuroscience	University of Calcutta, West Bengal, India.
<b>2011</b>	Baccalaureate (B.Sc.)	Microbiology	University of Calcutta, West Bengal, India.

### 3. ACADEMIC POSITIONS AND EMPLOYMENT

<b>2020–present</b>	Postdoctoral Fellow	University of Illinois Chicago, U.S.A. Advisor: Dr. Jonathan Coloff (2024–present). (transition following retirement of former mentor, Dr. Jonna Frasor) Advisor: Dr. Jonna Frasor (2020–2024).
<b>2018–2020</b>	Doctoral Candidate	Southern Illinois University, Carbondale, U.S.A. Advisor: Dr. Dale Buchanan Hales.
<b>2015–2018</b>	Pre-Doctoral Student	Southern Illinois University, Carbondale, U.S.A. Advisor: Dr. Dale Buchanan Hales.
<b>2013–2015</b>	Project Assistant	University of Calcutta, India. Advisor: Dr. Soumalya Basu.
<b>2012</b>	Summer Intern	Indian Institute of Technology, Kharagpur, India. Advisor: Dr. Koel Chaudhury.

### 4. RESEARCH SUPPORT

#### AWARDED

##### • Susan G. Komen Career Transition Award

Project Title: Ceramide actions in endocrine therapy-resistant breast cancer models.  
Proposal ID: CTA241181854  
Status of Support: Active  
Total Costs: \$650,000.00  
Funding Period: 09/06/2024 – 09/05/2029  
Effort: 12 calendar months  
Role: PI  
Objective: To test the hypothesis that ceramides interact with specific proteins located in the endoplasmic reticulum membrane which are enriched in ET-resistance, and thereby cause a lethal level of endoplasmic reticulum stress resulting in preferential killing of ET-resistant breast cancer cells.

## 5. AWARDS AND HONORS

- 2024** Postdoctoral Travel Award, University of Illinois Chicago, U.S.A.
- 2024** Best Poster, Dr. Gary Kruh Cancer Research Symposium, University of Illinois Chicago, U.S.A.
- 2020** Arthur R. Menendez Memorial Award for Graduate Student by the Department of Physiology, Southern Illinois University School of Medicine.
- 2020** Certificate of rank for 3rd position in 3-Minute-Thesis (3MT) competition, by the Graduate School, Southern Illinois University, Carbondale.
- 2019** Dr. Varadaraj Chandrashekhar Memorial award, by the Department of Physiology, Southern Illinois University School of Medicine.
- 2019** Florence M. Foote Physiology Scholarship award by the Department of Physiology, Southern Illinois University School of Medicine.
- 2018** Dr. Varadaraj Chandrashekhar Memorial award, by the Department of Physiology, Southern Illinois University School of Medicine.
- 2018** Larry Ewing Memorial Trainee Travel Fund grant at the 51st Annual Meeting of the Society for the Study of Reproduction (SSR), New Orleans, U.S.A.
- 2013** Certificate of Rank for 3rd position in M.Sc. Neuroscience, University of Calcutta, India.
- 2008** Scholarship of Merit from the Government of India under the “Scheme of Scholarship for College & University Student’s reg.” on the result of Higher Secondary examination.

## 6. PUBLICATIONS

### Peer-reviewed

- 2022** Emerging roles of ceramides in breast cancer biology and therapy (Review) — **Pal P.**, Atilla-Gokcumen G.E., Frasor J., *International Journal of Molecular Sciences*, (2022), 23(19), 11178. [[Read Article](#)]
- 2022** Endocrine therapy-resistant breast cancer cells are more sensitive to ceramide kinase inhibition and elevated ceramide levels than therapy-sensitive breast cancer cells — **Pal P.**, Millner A., Semina S.E., Huggins R.J., Running L., Aga D.S., Tonetti D.A., Schiff R., Greene G.L., Atilla-Gokcumen G.E., Frasor J., *Cancers(Basel)*, (2022), 14, 2380. [[Read Article](#)]
- 2022** Selective pressure of endocrine therapy activates the integrated stress response through NF $\kappa$ B signaling in a subpopulation of ER-positive breast cancer cells — Semina S.E., **Pal P.**, Kansara N.S., Huggins R.J., Alarid E.T., Greene G.L., Frasor J., *Breast Cancer Research*, (2022), 24(1):19. [[Read Article](#)]
- 2021** A review of principal studies on the development and treatment of epithelial ovarian cancer in the laying hen Gallus gallus (Review) — **Pal P.**, Starkweather K., Hales K., Hales D.B., *Comparative Medicine*, (2021) 71 (4), 271-284. [[Read Article](#)]
- 2020** The pro-apoptotic actions of 2-methoxyestradiol against ovarian cancer involve catalytic activation of PKC- $\delta$  signaling — **Pal P.**, Hales K., Hales D.B., *Oncotarget*, (2020) 11:3646-3659. [[Read Article](#)]
- 2019** Pro-apoptotic and anti-angiogenic actions of 2-methoxyestradiol and docosahexaenoic acid — the active biologically derived compounds from flaxseed diet in preventing ovarian cancer — **Pal P.**, Hales K., Petrik J., Hales D.B., *Journal of Ovarian Research*, (2019) 12:49. [[Read Article](#)]
- 2016** Structural analysis of sigma E interactions with core RNA polymerase and its cognate P-hsp20 promoter of *Mycobacterium tuberculosis* — Gupta A.M., **Pal P.**, Mandal S., *Journal of Biomolecular Structure and Dynamics*, (2016) 34 (4):792-9. [[Read Article](#)]

**Preprints**

- 2025** Ceramide-induced endoplasmic reticulum stress as a targetable vulnerability in endocrine therapy-resistant breast cancer — **Pal P.**, Chitkara S., Sarpey G.K., Alani F., Zhao H., Ata M., Qu J., Schiff R., Tonetti D., Greene G.L., Frasor J., Atilla-Gokcumen G.E., Coloff, J.L., *bioRxiv*, (2025). [[Read Article](#)]  
Current status: Submitted to *Molecular Cancer Research* (Under Revision).

**Conference Proceedings**

- 2025** Elucidating novel pro-apoptotic consequences of an altered sphingolipidome in endocrine therapy-resistant breast cancer. **Pal P.**, Lu D., Sarpey G., Frasor J., Atilla-Gokcumen G.E., Coloff J.L. *Journal of Biological Chemistry*, 301 (5). [[Read Abstract](#)]
- 2025** Elucidating novel pro-apoptotic consequences of ceramides in endocrine therapy-resistant breast cancer. **Pal P.**, Sarpey G., Atilla-Gokcumen G.E., Frasor J., Coloff J.L. *Cancer Research*, 85 (8-supplement-1). [[Read Abstract](#)]
- 2025** Elucidating novel pro-apoptotic consequences of an altered sphingolipidome in endocrine therapy-resistant breast cancer. **Pal P.**, Lu D., Atilla-Gokcumen G.E., Frasor J., Coloff J.L. *Clinical Cancer Research*, 31 (12-supplement). [[Read Abstract](#)]
- 2022** Exploiting ceramide homeostasis to target endocrine therapy-resistant breast cancer. **Pal P.**, Millner A., Atilla-Gokcumen G.E., Frasor J. *Cancer Research*, 82 (4-supplement). [[Read Abstract](#)]
- 2020** Dietary flaxseed supplementation in ovarian cancer: Elucidating the molecular actions of its biologically derived active compounds. **Pal P.**, Hales K., Hales D.B. *Clinical Cancer Research*, 26 (13). [[Read Abstract](#)]

**Manuscripts under preparation:**

- Whole flaxseed-supplemented diet decreases stromal fibrosis and increases host immune cell infiltration in ovarian tumors in laying hens. — Pal P., Hales K., Whorton A., Johns E., Hales D.B.
- Endocrine therapies induce PERK activation to promote survival advantages in persister luminal breast cancer cells. — Pal P., Coloff J.L.
- Ceramides interact with critical survival proteins in ET-resistant cells to inhibit cell survival and induce a lethal integrated stress response. — Pal P., Atilla-Gokcumen G.E., Coloff J.L.
- SQLE inhibition is a potential therapeutic strategy to target luminal breast cancer stem cells — Pal P., Atilla-Gokcumen G.E., Frasor J., Coloff J.L.

## 7. ACADEMIC CONFERENCES AND MEETINGS

**Oral presentations:**

- 2025** Elucidating novel pro-apoptotic consequences of an altered sphingolipidome in endocrine therapy-resistant breast cancer. — April 2025, *Emerging Investigator Seminar, Annual Meeting of American Society for Biochemistry and Molecular Biology (ASBMB)*, Chicago, Illinois, U.S.A.
- 2019** A whole flaxseed supplemented diet reduces fibrosis and enhances immune infiltration in laying hen model of ovarian cancer — November 2019, **9th Illinois Symposium on Reproductive Science (ISRS)**, Northwestern University, Illinois, U.S.A.
- 2019** The anti-cancer actions of the active biologically derived compounds from flaxseed diet against ovarian carcinogenesis. April 2019, **29th Annual Trainee Research symposium** — Southern Illinois University School of Medicine, Carbondale, Illinois, U.S.A.
- 2017** The pro-apoptotic and anti-angiogenic role of 2-methoxyestradiol in preventing ovarian cancer. April 2017, **27th Annual Trainee Research symposium** — Southern Illinois University School of Medicine, Carbondale, Illinois, U.S.A.

**Poster presentations (Selected):**

- 2025** Exploring pro-apoptotic vulnerabilities in endocrine therapy-resistant breast cancer due to sphingolipidomic alterations. Purab Pal, Godwin K Sarpey, G Ekin Atilla-Gokcumen, Jonna Frasor, Jonathan Coloff. August 2025 — **Gordon Research Conference (Hormone-Dependent Cancers)**, Newry, ME, U.S.A.
- 2025** Elucidating novel pro-apoptotic consequences of ceramides in endocrine therapy-resistant breast cancer. Purab Pal, Godwin K Sarpey, G Ekin Atilla-Gokcumen, Jonna Frasor, Jonathan Coloff. April 2025 — **AACR Annual Meeting 2025**, Chicago, Illinois, U.S.A.
- 2025** Elucidating novel pro-apoptotic consequences of an altered sphingolipidome in endocrine therapy-resistant breast cancer. Purab Pal, Godwin K Sarpey, G Ekin Atilla-Gokcumen, Jonna Frasor, Jonathan Coloff. April 2025 — **Annual Meeting of American Society for Biochemistry and Molecular Biology (ASBMB)**, Chicago, Illinois, U.S.A.
- 2024** Elucidating novel pro-apoptotic consequences of an altered sphingolipidome in endocrine therapy-resistance. Purab Pal, Daniel Lu, G Ekin Atilla-Gokcumen, Jonna Frasor, Jonathan Coloff. December 2024 — **San Antonio Breast Cancer Symposium (SABCS)**, San Antonio, Texas, U.S.A.
- 2024** Ceramides induce a lethal level of endoplasmic reticulum stress *via* interacting with TRAM1 to preferentially kill endocrine therapy-resistant breast cancer cells. Purab Pal, Daniel Lu, G. Ekin Atilla-Gokcumen, Jonna Frasor, Jonathan Coloff. September 2024 — **Midwest Metabolism Meeting (M3)**, Northwestern University, Chicago, Illinois, U.S.A.
- 2024** Ceramides induce a lethal level of endoplasmic reticulum stress to preferentially kill endocrine therapy-resistant breast cancer cells. Purab Pal, Daniel Lu, G. Ekin Atilla-Gokcumen, Jonna Frasor. April 2024 — **Dr. Gary Kruh Cancer Research Symposium**, University of Illinois Cancer Center, Chicago, Illinois, U.S.A.
- 2023** Ceramides inhibit key survival pathways and induce a lethal level of endoplasmic reticulum stress to preferentially kill endocrine therapy-resistant breast cancer cells. Purab Pal, Isra Alam, Daniel Lu, G. Ekin Atilla-Gokcumen, Jonna Frasor. August 2023 — **Gordon Research Conference (Hormone-Dependent Cancers)**, Newry, ME, U.S.A.
- 2022** Exploiting ceramide-sensitivity to target endocrine therapy-resistant breast cancer. Purab Pal, Alec Millner, Rosemary J Huggins, Geoffrey Greene, G. Ekin Atilla-Gokcumen, Jonna Frasor. April 2022 — **Dr. Gary Kruh Cancer Research Symposium**, University of Illinois Cancer Center, Chicago, Illinois, U.S.A.
- 2021** Exploiting ceramide homeostasis to target endocrine therapy-resistant breast cancer. Purab Pal, Alec Millner, G. Ekin Atilla-Gokcumen, Jonna Frasor. December 2021 — **San Antonio Breast Cancer Symposium (SABCS)**, San Antonio, U.S.A.
- 2021** Exploiting ceramide homeostasis to target endocrine therapy-resistant breast cancer. Purab Pal, Alec Millner, G. Ekin Atilla-Gokcumen, Jonna Frasor. October 2021 — **College of Medicine Research Forum 2021**, University of Illinois Chicago, Illinois, U.S.A.
- 2019** Dietary flaxseed supplementation in ovarian cancer: elucidating its anti-cancer molecular actions. Purab Pal, Emma Johns, Jim Petrik, Karen Hales, Dale Buchanan Hales. September 2019 — **AACR special conference on Advances in Ovarian Cancer Research**, Atlanta, U.S.A.
- 2018** The anti-cancer actions of the biologically active components of flaxseed against ovarian carcinogenesis. Purab Pal, Jim Petrik, Karen Hales, Dale Buchanan Hales. 8th **Illinois Symposium on Reproductive Science (ISRS)**, Carbondale, Illinois, U.S.A.
- 2018** The anti-cancer actions of the biologically active components of flaxseed against ovarian carcinogenesis. Purab Pal, Jim Petrik, Karen Hales, Dale Buchanan Hales. 51st Annual Meeting of **Society for Study of Reproduction (SSR)**, New Orleans, U.S.A.
- 2017** The pro-apoptotic and anti-angiogenic role of 2-methoxyestradiol in preventing ovarian cancer. Purab Pal, Kara Starkweather, Karen Hales, Dale Buchanan Hales. July 2017 — 50th Annual Meeting of **Society for Study of Reproduction (SSR)**, Washington D.C., U.S.A.
- 2016** Epigenetic response to oxidative stress in the laying hen model of ovarian cancer —  $\gamma$ H2Ax and miR200a as readouts. Purab Pal, Chris Weston, Dale Buchanan Hales. April 2016 — **26th Annual Trainee Research Symposium**, Southern Illinois University School of Medicine, Springfield, Illinois, U.S.A.

**2013** Biopolymer encapsulated epigallocatechin gallate nanoparticles: A potential therapeutic antioxidant agent. Purab Pal, Sourav Roy Choudhury, Koel Chaudhury. January 2013 — **International seminar on translational aspects of Neurodegenerative disorders — Neurocon**, Indian Institute of Chemical Biology (IICB), Calcutta, India.

## 8. PEDAGOGICAL RECORD

### 8.1. Teaching

- 2025** **Lecturer**  
 Course: Human Physiology (PHYB 551)  
 Level: Graduate  
Respiratory Physiology, 2-hour lecture  
  - Dynamic lung & chest wall mechanics (1 hour)
  - Control of respiration (1 hour)
 University of Illinois Chicago, U.S.A.
- 2022–present** **Instructor**  
 Course: Summer Pre-matriculation Program (SPP)  
 Level: Pre-health  
Renal Physiology, 3-hour lecture (2022–2025)  
Clinical Data Assessment, 2-hour team-based discussion (2022–2025)  
Female Reproductive Physiology, 1 hour lecture (2024–2025)  
 University of Illinois Chicago, U.S.A.
- 2015–2020** **Teaching Assistant**  
 Course: Principles of Physiology (PHSL 310)  
 Instructor(s) on record: James Ferraro and Denise Zaczek.  
 Level: B.S., Med-prep  
Mammalian Physiology, 0.5-hour lecture + 2.5-hour laboratory per week (Fall + Spring)  
 Southern Illinois University, Carbondale, U.S.A.
- 2013–2015** **Teaching Assistant**  
 Course: Bioinformatics and Computational Biology  
 Instructor(s) on record: Soumalee Basu.  
 Level: M.Sc.  
Bioinformatics and Computational Biology, 6 hour laboratory  
 University of Calcutta, India.
- 8.2. Mentoring**
- 2025** **Malik Ata**, Medical Student, UIC.
- 2024–2025** **Kathryn Schart**, Senior (Illinois Mathematics and Science Academy),  
 through Student Inquiry and Research (SIR) program.
- 2023–2024** **Shreenithi Palamuthy**, Undergraduate Student (Biomedical Engineering)  
 Recipient of The Honors College Undergraduate Research Grant.
- 2022–present** **Godwin Kaku Sarpey**, Undergraduate Student (Biological Sciences)  
 Current position: Research Associate, Coloff Lab.

## 9. LANGUAGES

<b>Bengali</b>	Comprehend, Speak, Read, Write (Native Language)
<b>English</b>	Comprehend, Speak, Read, Write
<b>Hindi</b>	Comprehend, Speak, Read
<b>Spanish</b>	Beginner

## 10. PROFESSIONAL AFFILIATIONS AND SERVICES

### Professional Memberships

- 2024–present** American Society for Biochemistry and Molecular Biology (ASBMB).  
**2023–2024** American Physiological Society (APS).  
**2019–present** American Association for Cancer Research (AACR), associate member.  
**2016–2020** Sigma XI, student member.  
**2016–2020** Society for the Study of Reproduction (SSR), student member.

### Journal Review

- 2023–** Clinics and Practice (MDPI).  
**2023–** Journal of Personalized Medicine (MDPI).  
**2023–** Cancers (MDPI).  
**2023–** Journal of Clinical Medicine (MDPI).  
**2023–** Lipids in Health and Diseases (Springer Nature).  
**2022–** Journal of the Endocrine Society (Oxford Academic).

### Professional Services

- 2025** **Judge** at the 29th Annual Undergraduate Poster Competition at Annual Meeting of American Society for Biochemistry and Molecular Biology [04.12.2025].  
**2025** **Judge** at the College of Medicine Research Forum 2024-2025 at University of Illinois at Chicago, Illinois, U.S.A [01.24.2025].  
**2022** **Judge** at the 6th Annual Research Symposium of the Graduate Education in Biomedical Sciences (GEMS) program at University of Illinois at Chicago, Illinois, U.S.A. [09.30.2022].  
**2019** Member of the **Organization Committee** for the 9th Illinois Symposium on Reproductive Science (ISRS), Chicago, Illinois, U.S.A. [11.13. 2019].  
**2018–2019** Graduate student member of the **Graduate Program Committee (GPC)** of Molecular, Cellular and Systemic Physiology, Southern Illinois University, Carbondale.  
**2016** **Judge** at the annual IJAS Region 8 Science Fair in the Health Sciences division of poster presentation held at Southern Illinois University, Carbondale, Illinois, U.S.A. [03.10.2016].  
**2013** Conducted a workshop on Sequence Analysis at Heritage Institute of Technology, Kolkata, India, on protein structure prediction, organized by Department of Biotechnology of Heritage Institute of Technology [09.24.2013].

Updated on 21:45, Monday 12<sup>th</sup> January, 2026.