





CURRICULUM VITAE

Purab Pal, Ph.D.

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1. PERSONAL INFORMATION

Current Title: Postdoctoral Research Associate
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2. EDUCATION

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

3. ACADEMIC POSITIONS AND EMPLOYMENT

2020–present	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).
2018–2020	Doctoral Candidate	Southern Illinois University, Carbondale, U.S.A. Advisor: Dr. Dale Buchanan Hales.
2015–2018	Pre-Doctoral Student	Southern Illinois University, Carbondale, U.S.A. Advisor: Dr. Dale Buchanan Hales.
2013–2015	Project Assistant	University of Calcutta, India. Advisor: Dr. Soumalee Basu.
2012	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 Chandrashekar 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 Chandrashekar 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 κ 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- δ 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 — γ 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

Bengali	Comprehend, Speak, Read, Write (Native Language)
English	Comprehend, Speak, Read, Write
Hindi	Comprehend, Speak, Read
Spanish	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].

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