

Curriculum Vitae

Vinay Shukla, Ph.D., M.Sc.

Postdoctoral Fellow, Department of Obstetrics, Gynecology and Reproductive Sciences
University of Maryland, School of Medicine

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Contact Information

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Languages: English and Hindi

Education

2010 B.Sc., Chemistry and Zoology, DDU Gorakhpur University, Gorakhpur, India

2012 M.Sc., Biotechnology, DDU Gorakhpur University, Gorakhpur, India

2019 Ph.D., Science (Reproductive Biology), CSIR -Central Drug Research Institute
(AcSIR), Lucknow, India, "Title of thesis: Role of microtubule polymerization and
related protein TPPP3 in the embryo implantation"
Thesis Advisor- Dr. Anila Dwivedi

Post Graduate Education and Training

2019-2024 Postdoctoral Fellow, University of Kansas Medical Center, Kansas City, KS, USA,
Advisor- Dr. Michael J. Soares

2024-present Postdoctoral Fellow, University of Maryland, School of Medicine, Baltimore, MD,
USA, Advisor- Dr. Irina Burd

Biosketch

Dr. Vinay Shukla is a Postdoctoral Fellow in the Department of Obstetrics, Gynecology, and Reproductive Sciences at the University of Maryland School of Medicine, Baltimore, USA. Dr. Shukla earned his undergraduate and master's degrees from DDU Gorakhpur University, India. He completed his Ph.D. at the CSIR-Central Drug Research Institute, India. Dr. Shukla has over 12 years of experience in Reproductive Biology. He is a member of several scientific organizations, including SRI, SSR, ISSRF, SRBCE, IISc, APA and DOHaD. Dr. Shukla has received numerous honors, including the Young Scientist Award from ISSRF, the BRTP Postdoctoral Award, NIH K-INBRE Postdoctoral Award, and the Top Reviewing Editor Award from the Society for the Study of Reproduction (SSR), USA.

Employment History

Academic Appointments

- 2013-2016 Project Fellow, Endocrinology, Central Drug Research Institute (CSIR-CDRI), Lucknow, UP, India
- 2016-2019 Senior Research Fellow, Endocrinology Division, Central Drug Research Institute (CSIR-CDRI), Lucknow, UP, India

Professional Society Membership

- 2017-Present Trainee member, Society for the Study of Reproduction, USA
- 2017-Present Life member, Indian Society for the Study of Reproduction & Fertility, Jaipur, India
- 2017-Present Life member, Society for Reproductive Biology and Comparative Endocrinology, Chennai, India
- 2018-Present Life member, Animal Physiologists Association, India
- 2019-Present Life member, Indian Science Congress Association, Kolkata, India
- 2020-2021 Student/Trainee Member of American Heart Association, Dallas, TX, USA
- 2020-2021 AAAS (American Association for the Advancement of Science) member, Washington, D.C., USA
- 2021-Present Trainee member, Society for Reproductive Investigation, USA
- 2023-Present Associate Member of International Society for Developmental Origins of Health and Disease (DOHaD), London, UK

Honors And Awards

- 2016 Senior Research Fellowship from Indian Council of Medical Research, New Delhi, India
- 2016 Senior Research Fellowship from Council of Scientific & Industrial Research, New Delhi, India
- 2017 Larry Ewing Memorial Trainee Travel Fund grant from the Society for the Study of Reproduction, USA
- 2017 Department of Biotechnology (Gov. of India) International Travel Grant, India
- 2017 Indian Council of Medical Research International Travel Grant, India
- 2018 Best Poster Award from Animal Physiologists Association, India
- 2019 CSIR- Central Drug Research Institute Incentive Award for Publication, India
- 2019 Prof. S. S. Guraya Young Scientist Award from Indian Society for the Study of Reproduction and Fertility, India
- 2020 KU Medical Center - Biomedical Research Training Program (BRTP) Postdoctoral Award, USA
- 2020 Kansas IDeA Network of Biomedical Research Excellence (K-INBRE) Postdoctoral Award, KS, USA
- 2020 Society for the Study of Reproduction Trainee Travel Award 2020, USA
- 2021 Donald C. Johnson Trainee Travel Award, Institute for Reproduction and Perinatal Research, KU Medical Center, Kansas City, USA

- 2022 Donald C. Johnson Trainee Travel Award, Institute for Reproduction and Perinatal Research, KU Medical Center, Kansas City, USA
- 2023 2022 Biology of Reproduction Top Reviewing Editor Award, Society for the Study of Reproduction, Biology of Reproduction, Wakefield, MA, USA

Administrative Service

Institutional Service

- 2021-2024 Oral and Poster Session Judge in the Student Research Forum, University of Kansas Medical Center, Kansas City, KS, USA
- 2022-2024 Board Member, University of Kansas Medical Center Postdoctoral Association, Kansas City, KS, USA
- 2023-2024 Advisor, Cricket Club-University of Kansas Medical Center, Kansas City, KS, USA

Local and National Service

- 2019-Present Ad Hoc Reviewer, *Biology of Reproduction, Biomedicines, Cells, Environmental Health Perspectives, European, Journal of Obstetrics & Gynecology and Reproductive Biology, Frontiers in Cell and Developmental Biology, Frontiers in Endocrinology, Frontiers in Genetics, Frontiers in Medical Technology, Frontiers in Physiology, Frontiers in Psychology, Frontiers in Reproductive Health, Gene, Gene Reports, Organoids, International Journal of Environmental Research and Public Health, International Journal of Molecular Sciences, Journal of Clinical Medicine, Journal of Reproductive Immunology, Life Science Alliance, Medicina, Placenta, PLOS ONE, Reproductive Biology, Reproductive BioMedicine Online, Reproductive Medicine, Scientific Report- Nature, Stem Cell Reports- Cell, Toxics.*
- 2021 Poster Session Judge in the 19th Annual Kansas-IDeA Network of Biomedical Research Excellence Symposium, Kansas City, KS, USA
- 2021-Present Review Editor, *Frontiers in Physiology* (Section: Developmental Physiology)
- 2021-Present Review Editor, *Frontiers in Reproductive Health* (Section: Gynecology)
- 2021-Present Review Editor, *Frontiers in Medical Technology* (Section: Regenerative Technologies)
- 2022-Present Review Editor, *Frontiers in Endocrinology* (Section: Reproduction)
- 2022-Present Review Editor, *Frontiers in Global Women's Health* (Section: Maternal Health)
- 2022 Poster and Oral talk Abstract Reviewer, 69th Annual Meeting of Society for Reproductive Investigation, Denver, CO, USA
- 2022 Poster Session Judge, 69th Annual Meeting of Society for Reproductive Investigation, Denver, CO, USA
- 2024 Poster and Oral talk Abstract Reviewer, 57th Annual Meeting of Society for the Study of Reproduction, Dublin, Ireland
- 2024-Present Guest Associate Editor in Embryonic Development, *Frontiers*, Lausanne, Switzerland

Grant Support

Completed Grants:

- 2016-2019 PI: Vinay Shukla
"Role of tubulin polymerization promoting protein 3 (TPPP3) in the embryo implantation and decidualization"
Senior Research Fellowship, Indian Council of Medical Research, New Delhi, India,
Total Costs: INR 1,128,000
- 2020-2020 PI: Vinay Shukla
"Role of WNT Signaling in Trophoblast Cell Differentiation and Placental Disease"
KUMC Biomedical Research Training Program (BRTP) Postdoctoral Award
Total Costs: \$13,000
- 2020-2021 PI: Vinay Shukla
"Role of WNT Signaling in Trophoblast Cell Differentiation and Placental Disease"
Kansas IDeA Network of Biomedical Research Excellence (NIH: K-INBRE)
Postdoctoral Award
Total Costs: \$38,248

Publications

1. B. Sathish Kumar, Amit Kumar, Jyotsna Singh, Mohammad Hasanain, Arjun Singh, Kaneez Fatima, Dharmendra K. Yadav, **Vinay Shukla**, Suaib Luqman, Feroz Khan, Debabrata Chanda, Jayanta Sarkar, Rituraj Konwar, Anila Dwivedi, Arvind S. Negi. Synthesis of 2-alkoxy and 2-benzyloxy analogues of estradiol as antibreast cancer agents through microtubule stabilization. (2014) *European Journal of Medicinal Chemistry* 86 740-751.
2. M Manohar, H Khan, **Vinay Shukla**, V Das, A Agarwal, Amita Pandey, Waseem Ahmed Siddiqui and Anila Dwivedi. Proteomic Identification and Analysis of Human Endometrial Proteins Associated Unexplained Infertility. (2014) *Journal of Proteomics & Bioinformatics* 7: 359-366.
3. **Vinay Shukla**, Vishal Chandra, P. Sankhwar, Pooja Popli, Jyoti B Kaushal, Vijay K Sirohi, Anila Dwivedi. Phytoestrogen genistein inhibits EGFR/PI3K/NF- κ B activation and induces apoptosis in human endometrial hyperplasia cells. (2015) *Royal Society of Chemistry Advances* 5, 56075-56085.
4. Pooja Popli, Vijay K Sirohi, Murli Manohar, **Vinay Shukla**, Jyoti B Kaushal, Kanchan Gupta, Anila Dwivedi. Regulation of cyclooxygenase-2 expression in rat oviductal epithelial cells: evidence for involvement of GPR30/Src kinase- mediated EGFR pathway. (2015) *Journal of Steroid Biochemistry Molecular Biology* 154:130-41
5. Jyoti B Kaushal, Pushplata Sankhwar, Suparna Kumari, Pooja Popli, **Vinay Shukla**, Mohd Hussain, Kanchan Hajela, and Anila Dwivedi. The regulation of Hh/Gli1 signaling cascade involves Gsk3 β - mediated mechanism in estrogen-derived endometrial hyperplasia. (2017) *Scientific Reports* 7(1):6557.

6. Vijay K Sirohi, Kanchan Gupta, Rohit Kumar, **Vinay Shukla**, Anila Dwivedi. Selective estrogen receptor modulator Ormeloxifene suppresses embryo implantation via inducing miR-140 and targeting insulin-like growth factor 1 receptor in rat uterus. (2018) *Journal of Steroid Biochemistry Molecular Biology* pii: S0960-0760(18)30007- 4.
7. Kanchan Gupta, Vijay K. Sirohi, Suparna Kumari, **Vinay Shukla**, Manohar M, Pooja Popli, Anila Dwivedi. Sorcin is essential for blastocyst implantation via VEGF/PI3K/Akt pathway in mouse endometrium. (2018) *Journal of Molecular Endocrinology* 60(2):119-132
8. Jyoti B Kaushal, Pooja Popli, Pushplata Sankhwar, **Vinay Shukla**, Anila Dwivedi. Sonic hedgehog protects endometrial hyperplasia cells against oxidative stress via suppressing mitochondrial fission protein dynamin-like GTPase (Drp1). (2018) *Free Radical Biology and Medicine* 129:582-599.
9. **Vinay Shukla**, Pooja Popli, Jyoti B Kaushal, Kanchan Gupta, Anila Dwivedi. Uterine TPP3 plays important role in embryo implantation via modulation of β -catenin. (2018) *Biology of Reproduction* 99, 982–999.
10. **Vinay Shukla**, Jyoti B Kaushal, Pushplata Sankhwar, Murli Manohar, Anila Dwivedi. Inhibition of TPP3 attenuates β -catenin/NF- κ B/COX-2 signaling in endometrial stromal cells and impairs decidualization. (2019) *Journal of Endocrinology* 240, 1-14.
11. **Vinay Shukla**, Jyoti B Kaushal, Rohit Kumar, Pooja Popli, Promod K Agnihotri, Kalyan Mira, Anila Dwivedi. Microtubule depolymerization attenuates WNT4/CaMKII α signaling in mouse uterus and leads to implantation failure. (2019) *Reproduction* 158 (1), 47-59.
12. Jyoti B Kaushal, **Vinay Shukla**, P. Sankhwar, Rajesh K Jha, Anila Dwivedi. Targeted inhibition of TAK1 abrogates TGF β 1 non-canonical signaling axis, NF κ B/Smad7 inhibiting human endometrial cells proliferation and inducing cell death involving autophagy. (2021) *Cytokine* 148:155700.
13. Pooja Popli, **Vinay Shukla**, Jyoti B Kaushal, Rohit Kumar, Kanchan Gupta, Anila Dwivedi. Peroxiredoxin 6 Plays Essential Role in Mediating Fertilization and Early Embryonic Development in Rabbit Oviduct. (2021) *Reproductive Sciences*. 23:1-7.
14. **Vinay Shukla***, Michael J Soares*. Modeling trophoblast cell-guided uterine spiral artery transformation in the rat. (2022) *International Journal of Molecular Sciences*, 23(6):2947. (*co-corresponding author).
15. **Vinay Shukla***, Ayelen Moreno-Irusta, Kaela M. Varberg, Marija Kuna, Anna M. Galligos, Khursheed Iqbal, John D. Aplin, Rahul H. Choudhury, Hiroaki Okae, Takahiro Arima, Michael J. Soares*. NOTUM mediated WNT signaling drives extravillous trophoblast cell lineage development. (2024). *Proceedings of the National Academy of Sciences*, 121 (40) e2403003121. (*co-corresponding author).
16. **Vinay Shukla***, Khursheed Iqbal, Hiroaki Okae, Takahiro Arima, Michael J. Soares*. Effects of aryl hydrocarbon receptor ligand TCDD on human trophoblast cell development. (2024) *BioRxiv* <https://doi.org/10.1101/2024.08.27.609205> (*co-corresponding author).

Major Invited Speeches

- 2018 “Microtubule depolymerization attenuates WNT4/CaMKII α signaling in mouse uterus and leads to implantation failure” in Animal Physiologists Association (APACON-2018), ICAR-Indian Veterinary Research Institute, Izatnagar; UP, India
- 2019 “Novel role of TPPP3 in blastocyst implantation and decidualization” in 29th Annual Meeting of Indian Society for the Study of Reproductive & Fertility (ISSRF), Jawaharlal Nehru University, New Delhi, India
- 2020 “NOTUM-dependent Modulation of WNT Signaling in Extravillous Trophoblast Cell Lineage Development” in 17th Annual Greenwald Symposium, Kansas City, KS, USA
- 2021 “Role of WNT Signaling in Trophoblast Cell Differentiation and Placental Disease” in K-INBRE Mentoring Core Meeting, Kansas City, KS, USA
- 2022 “Involvement of EPAS1/HIF2A in Trophoblast Lineage and Placental Development” in the 69th Annual Meeting of Society for Reproductive Investigation, Denver, CO, USA
- 2024 “Caffeine exposure impacts human trophoblast cell development” in the International Conference of Nanochemistry and Theragnostic, Lalit Naryan Mithila University, Darbhanga, India

Conferences & Symposia:

- 2016 Poster presentation in the International Symposium on Integrative Physiology and Comparative Endocrinology & 34th Annual Meeting of the Society for Reproductive Biology and Comparative Endocrinology, Banaras Hindu University, Varanasi-221005, UP, India
- 2017 Poster presentation in the 50th Annual Meeting of the Society for the Study of Reproduction, Washington D.C., USA
- 2017 Poster presentation in the International Conference on Reproductive Health with Emphasis on the Strategies for Infertility, Assisted Reproduction and Family Planning & 27th Annual Meeting of the Indian Society for the study of Reproduction and fertility, AIIMS, New Delhi, India
- 2018 Poster presentation in the Animal Physiologist Association Conference IVRI-Izatnagar, Bareilly, UP, India
- 2018 Poster presentation in The World Congress on Reproductive Health with Emphasis on Family Planning and Assisted Reproductive Technology & 28th Annual Meeting of the Indian Society for the Study of Reproduction and Fertility, CSIR-IICT, Hyderabad, India
- 2019 Poster presentation in the 16th Annual Gilbert S. Greenwald Symposium on Reproduction and Perinatal Research, Kansas City, USA
- 2020 Trainee Oral Presentation in 17th Annual Greenwald Symposium, (Virtual), KS, USA
- 2020 Presented an e-poster in the 53rd Annual Meeting of the Society for the Study of Reproduction (SSR), Ottawa, Canada (virtual)
- 2021 Poster presentation in the International Federation of Placenta Associations, Amsterdam, Netherlands (virtual)
- 2021 Poster presentation in the 18th Annual Gilbert S. Greenwald Symposium on Reproductive and Developmental Sciences, Kansas City, KS, USA

- 2021 Poster presentation in the 54th Annual Meeting of the Society for the Study of Reproduction, St. Louis, MO, USA
- 2021 Poster presentation in the 68th Annual Meeting of the Society for Reproductive Investigation (SRI), Boston, MA, USA
- 2021 Oral presentation in K-INBRE Mentoring Core Meeting, Kansas City, USA
- 2022 Oral presentation in the 69th Annual Meeting of the Society for Reproductive Investigation, Denver, CO, USA
- 2022 Poster presentation in the 19th Annual Gilbert S. Greenwald Symposium on Reproductive and Developmental Sciences, Kansas City, KS, USA.
- 2023 Poster presentation in the 20th Annual Gilbert S. Greenwald Symposium on Reproductive and Developmental Sciences, Kansas City, KS, USA.
- 2023 Poster presentation in the 7th Annual US DOHaD Meeting, Kansas City, MO, USA
- 2024 Poster presentation in the SRI 71st Annual Scientific Meeting, Vancouver, BC, Canada