

NAMDEV SHIVAJI TOGRE

Postdoctoral Scholar

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Research Summary

My current research investigates the long-term neurobehavioral consequences of perinatal exposure to microplastics and organophosphate flame retardants (OPFRs) by defining mechanisms underlying cognitive dysfunction, stress neurocircuitry, and sex-biased susceptibility. I study how perinatal exposure affects learning, memory, and stress circuits in male and female offspring. In parallel, I investigate microplastic-induced neuroinflammation through the P2X7 receptor–extracellular vesicle signaling axis to understand how environmental exposures drive blood–brain barrier dysfunction and neuroimmune dysregulation. Both projects use rodent exposure models, behavioral testing, brain tissue analysis, and molecular and immune readouts, with sex as a biological variable.

At Temple University, I showed that P2X7 receptor signaling contributes to blood–brain barrier injury and neuroinflammation during chronic alcohol and e-cigarette exposure. I used chronic vapor exposure models, P2X7 knockout mice, and extracellular vesicle analysis. This work led to first-author, co-corresponding papers in the *Journal of Neuroinflammation*, *Brain, Behavior, and Immunity*, and the *International Journal of Molecular Sciences*, and pointed to possible therapeutic targets.

Earlier in my career, I studied *Mycobacterium tuberculosis* virulence and immune evasion under BSL-3 conditions. During my PhD, I developed helminth-derived protein biotherapeutics for ulcerative colitis and showed their efficacy in mouse models.

I have about twelve years of research experience in rodent models, behavioral neuroscience, molecular biology, immunology, and animal and biosafety compliance. I am using these skills to help set up a new laboratory at Penn State.

Research Experience

Environmental toxicants and the brain: neurobehavioral outcomes, neuroinflammation, and blood–brain barrier dysfunction.

Department of Biobehavioral Health, The Pennsylvania State University, PA (June 2026 – Present)

- Investigating how perinatal exposure to microplastics and organophosphate flame retardants (OPFRs) disrupts cognitive processing in adult male and female offspring
- Examining long-lasting deficits in learning, memory, and stress neurocircuitry induced by developmental exposure, using behavioral testing
- Identifying sex-biased vulnerability at the intersection of endocrine disruption and chronic stress-induced maladaptive states
- In a separate project, investigating how microplastic exposure drives neuroinflammation through the P2X7 receptor–extracellular vesicle signaling axis, and how this leads to blood–brain barrier dysfunction and neuroimmune dysregulation
- Helping establish the laboratory's cell culture and blood–brain barrier model capability and a breeding colony

Molecular mechanisms regulating blood-brain barrier functions during alcohol abuse

Lewis Katz School of Medicine, Temple University, Philadelphia (December 2022 – June 2026)

- Led preclinical rodent studies investigating neuroinflammation and blood–brain barrier dysfunction during chronic intermittent ethanol (CIE) exposure and nicotine e-cigarette co-exposure, integrating behavioral, biochemical, and molecular endpoints
- Designed and implemented chronic vapor exposure paradigms including 16-h CIE exposure and automated e-cigarette inhalation models to study substance-induced neuroimmune and vascular injury
- Contributed to cannabinoid vapor exposure studies (THC and CBD), including animal exposure procedures, physiological monitoring, and post-exposure tissue harvesting for immunological and molecular analyses
- Conducted survival procedures, tissue collection, and brain tissue microdissection to assess neuroinflammatory and neurotoxic effects
- Contributed to extracellular vesicle isolation and nanoparticle tracking analysis, and measured cytokines (MSD ELISA) and gene expression (qRT-PCR, PCR arrays) in brain microvessels, serum, and plasma
- Assessed behavior and spatial memory in male and female mice during chronic ethanol exposure
- Developed IACUC-compliant animal protocols and SOPs for chronic vapor exposure studies, welfare monitoring, and endpoint assessment
- Established and maintained a P2X7 receptor knockout mouse colony enabling mechanistic studies of neuroinflammation and BBB dysfunction
- Oversaw animal welfare assessments including temperature monitoring, body weight tracking, and humane endpoint evaluation during repeated exposure studies
- Performed endpoint monitoring and analyzed molecular and behavioral datasets to generate preclinical study reports
- Mentored graduate students in experimental design, compliance, and study documentation
- Publications: Mekala et al., 2026; Togre et al., 2026 a-b; Togre et al., 2025; Togre et al., 2024

Crosstalk between the kallikrein-kinin system (kks) and type i interferons in sle and neuro-psychiatric lupus

Lewis Katz School of Medicine, Temple University, Philadelphia (May 2022 – June 2026)

- Contributed to in vivo mouse studies, including behavioral assays to evaluate depressive-like phenotypes in lupus models. Publication: Bhoj et al., 2024

Pathogenesis of mycobacterium tuberculosis: mechanisms of virulence and host immune evasion

University of Texas at El Paso, El Paso, TX (Oct 2021 – Dec 2022)

- Executed preclinical infection studies to assess bacterial virulence and host immune responses, including tissue dissemination and survival analysis
- Managed animal study execution under BSL-2, BSL-3, and ABSL-3 conditions, ensuring compliance with biosafety standards
- Performed molecular and imaging assays including qPCR, confocal microscopy, and IVIS to evaluate pathogen dissemination
- Performed bacterial culture, growth kinetics, and drug inhibition assays with Mycobacterium species
- Developed and standardized SOPs for infection studies, animal handling, and sample collection
- Trained junior researchers in study execution, documentation, and biosafety compliance
- Publications: Togle et al., 2022; Mallakuntla et al., 2022

Identification and characterization of neutralizing monoclonal antibodies against hepatitis E virus

National Institute of Virology, Department of Hepatitis, Pune, Maharashtra (Jan 2019 – Feb 2020)

- Isolated PBMCs and extracted RNA from clinical samples.
- Amplified IgG heavy chain genes from donor cDNA by PCR and cloned them into the pCR2.1-TOPO vector (lysate PCR, EcoRI digestion) for antibody characterization
- Analyzed heavy chain sequences against human germline genes using V-BASE and NCBI IgBLAST

Development of biotherapeutics for autoimmune and inflammatory disorders

Mahatma Gandhi Institute of Medical Sciences, India (2014 – 2019)

Helminth-derived biotherapeutics for autoimmune colitis

- Conducted preclinical studies of recombinant filarial proteins in mouse models, including dose–response and survival assays to evaluate therapeutic safety and efficacy
- Cloned, expressed, and purified recombinant filarial proteins (affinity chromatography, FPLC)
- Used DSS-induced colitis models in mice
- Performed IP, IV, SC, intradermal, and intra-articular injections, ensuring precise dosing, tolerability assessment, and reliable pharmacological outcomes in preclinical studies
- Collected tissues and analyzed biochemical, cytokine, and histological endpoints to evaluate inflammation and immunomodulatory effects
- Publications: Togle et al., 2018a–d

Therapeutic and preventive strategies against lymphatic filariasis

- Used filarial challenge models in *Mastomys coucha* and jirds, and propagated *Brugia malayi* parasites
- Performed animal surgeries, in situ micropore chamber experiments, and vaccine challenge studies to assess systemic and tissue-specific effects
- Performed in vivo prophylactic studies in *Mastomys* to test the dose-dependent efficacy of recombinant filarial antigens (glutathione-S-transferase and abundant larval transcript-2) against *Brugia malayi* challenge
- Performed in vitro drug screening and inhibition assays on *Brugia malayi* microfilariae to evaluate plant extracts (*Murraya koenigii*) and sulfonamide chalcone compounds
- Used MTT assay, cytochrome c ELISA, and fluorescence microscopy (EB/AO staining) to assess apoptosis, and homology modeling, molecular docking, and a DHFR enzyme inhibition assay to study the mechanism of action
- Publications: Nakhale et al., 2024; Bhoj et al., 2023; Bhoj et al., 2019

Shared across both areas

- Collaborated cross-functionally with pathologists and microbiologists to evaluate the pathological changes in response to the treatments
- Developed IACUC-compliant study protocols, dosing schedules, and SOPs to standardize pre-clinical workflows
- Mentored post-graduate students

Industry Research Experience

Pathkind Diagnostics Pvt. Ltd., Nagpur, India (Jun 2021 – Sep 2021)

- Oversaw high-throughput qRT-PCR and immunodiagnostic assays under NABL/QA regulations
- Ensured accuracy of data reporting and supported audit-ready documentation

Skills

Animal Handling and colony management:

- Proficient in breeding, colony management, and experimental handling of murine and rodent models, including BALB/c, Rag^{-/-}, C57BL/6J, NZBW/F1, MRL/lpr, SLE 123 mice, *Meriones unguiculatus*, and *Mastomys coucha*
- Experience with autoimmune and inflammatory disease models (colitis, diabetes, arthritis, lupus)
- Skilled in small animal surgery, survival studies, cervical lymph node isolation, brain microdissection, dorsal root ganglia (DRG) collection, perfusion, brain microvessel isolation and in situ micropore chamber experiments
- Behavioral assays: tail suspension test, locomotor activity test, object placement/recognition test
- Proficient in multiple administration routes (retro-orbital, intraperitoneal, intravenous, subcutaneous, intra-articular) and blood collection techniques (cheek punch, tail tip, retro-orbital, cardiac puncture)

Molecular Biology:

- Hands-on experience with qRT-PCR, digital PCR, PCR, gene expression arrays, RNA isolation, cloning and expression of recombinant proteins
- Protein analysis using SDS-PAGE, agarose gel electrophoresis, and chromatographic purification methods (Affinity chromatography, FPLC, 2D gel electrophoresis)

Immunology:

- Experience performing MSD ELISA, conventional ELISA, Western blotting, MTT assays, cell culture and proliferation assays
- In vitro functional assays including antibody-dependent cell-mediated cytotoxicity (ADCC)
- Development and evaluation of lateral-flow chromatography-based diagnostic assays

Microbiology & Cell Culture

- Skilled in bacterial culture, growth kinetics, transformation, transfection, drug screening, inhibition assays, and PBMC isolation
- Experience with human cell culture systems and laboratory propagation of parasites, including filarial parasite

Imaging & Microscopy

- Experience with immunohistochemistry, immunostaining, immunofluorescence, cytospin preparation, light/confocal microscopy and IVIS.

Biosafety Experience:

- Extensive hands-on experience working with *Mycobacterium* species in BSL-2, BSL-3, and ABSL-3 laboratory environments
- Strict adherence to biosafety, animal ethics, and human research compliance standards

Data Analysis & Software Tools

- Proficient in GraphPad Prism, IBM SPSS, ImageJ, Microsoft Office
- Applied use of bioinformatic and structural analysis tools (homology modeling, peptide prediction, docking) in support of experimental studies

Professional appointments:

- **Postdoctoral Scholar- Developmental Neurotoxicology & Stress Neurocircuitry**

*Department of Biobehavioral Health, The Pennsylvania State University, PA.
June 2026 – Present*

- **Postdoctoral Fellow – Preclinical Neuroinflammation & BBB Studies**

*Lewis Katz School of Medicine, Temple University, Philadelphia, PA
Dec 2022 – Present*

- **Postdoctoral Researcher – Infectious Disease Research**

*University of Texas at El Paso, El Paso, TX
Oct 2021 – Dec 2022*

- **Junior Scientist – Molecular Biology**

Pathkind Diagnostics Pvt. Ltd., Nagpur, India
Jun 2021 – Sep 2021

- **Research Associate – HEV Monoclonal Antibody Project**

National Institute of Virology (ICMR), Pune, India
Jan 2019 – Feb 2020

- **Doctoral Research Fellow (Ph.D. in Biochemistry)**

Mahatma Gandhi Institute of Medical Sciences, Sewagram, India

- *Jul 2014 – Jun 2019*

Education

- **Ph.D., Biochemistry**, Rashtrasant Tukadoji Maharaj Nagpur University, 2019
- **M.S., Biochemistry**, Rashtrasant Tukadoji Maharaj Nagpur University, 2013
- **B.S., Biochemistry**, Swami Ramanand Teerth Marathwada University, 2011

Publications

Citations: 295, h index: 12; i10 index: 12

Full list at google scholar <https://scholar.google.com/citations?user=8EzntAUAAAAJ&hl=en>

Peer-Reviewed Publications

- **Togre N*#**, Del Carpio-Cano F, Mekala N, Winfield M, Sriram U, Rom S, Persidsky Y. Purinergic-immune crosstalk in alcohol-induced neuroinflammation is modulated by e-cigarette co-exposure. *NeuroImmune Pharmacology and Therapeutics* 2026a. <https://doi.org/10.1515/nipt-2026-0013> (***First author** #**Co-corresponding author**)
- **Togre NS*#**, Mekala N, Bhoj PS, Mogadala N, Winfield M, Trivedi J, Grove D, Kotnala S, Rom S, Sriram U, Persidsky Y. Neuroinflammatory responses and blood-brain barrier injury in chronic alcohol exposure: role of purinergic P2×7 receptor signaling. *Journal of Neuroinflammation* 2024, 21(1):244. <https://doi.org/10.1186/s12974-024-03230-4> (***First author** #**Co-corresponding author**)
- **Togre NS*#**, Bhoj PS, Mekala N, Hancock R, Trivedi J, Persidsky Y. Purinergic and extracellular vesicle signaling in alcohol-induced blood-brain barrier breakdown and neuroimmune activation. *Brain, Behavior, and Immunity* 2025, 130:106115. <https://doi.org/10.1016/j.bbi.2025.106115> (***First author** #**Co-corresponding author**)
- **Togre NS*#**, Bhoj PS, Mekala N, Trivedi J, Winfield MY, Hancock RE, Sriram U, Rom S, Persidsky Y. P2X7R signaling and differential regulation of neuroinflammatory and behavior responses in male and female mice during chronic ethanol exposure. *Int J Mol Sci* 2026b, 27(5):2332. <https://doi.org/10.3390/ijms27052332> (***First author** #**Co-corresponding author**)
- Mekala N, **Togre N**, Kurian S, Rom S, Sriram U, Persidsky Y. Alcohol and e-cigarettes activate P2X7R in lung epithelial cells, stimulating release of plasminogen activator in extracellular vesicles, injuring blood-brain barrier. *Cells* 2026, 15(19):1750. <https://doi.org/10.3390/cells15191750>
- Bhoj P, **Togre N#**, Rojekar S, Batra L, Amdare N. Editorial: Advances in infectious disease research: tackling antimicrobial resistance, zoonoses, and more. *Front Cell Infect Microbiol* 2025, 15:1671915. <https://doi.org/10.3389/fcimb.2025.1671915> (#**Corresponding author**)
- Rojekar S, Gholap AD, **Togre N**, Bhoj P, Haeck C, Hatvate N, Singh N, Vitore J, Dhoble S, Kashid S, et al. Current status of mannose receptor-targeted drug delivery for improved anti-HIV therapy. *Journal of Controlled Release* 2024, 372:494-521. <https://doi.org/10.1016/j.jconrel.2024.06.002>
- Mekala N, Trivedi J, Bhoj P, **Togre N**, Rom S, Sriram U, Persidsky Y. Alcohol and e-cigarette damage alveolar-epithelial barrier by activation of P2X7r and provoke brain endothelial injury via extracellular vesicles. *Cell Communication and Signaling* 2024, 22(1):39. <https://doi.org/10.1186/s12964-023-01461-1>
- Bhoj PS, Nocito C, **Togre NS**, Winfield M, Lubinsky C, Khan S, Mogadala N, Seliga A, Unterwald EM, Persidsky Y, et al. Tissue kallikrein-1 suppresses type I interferon responses and reduces depressive-like behavior in the MRL/lpr lupus-prone mouse model. *Int J Mol Sci* 2024, 25(18):10080. <https://doi.org/10.3390/ijms251810080>
- Nakhale MR, Bhoj P, **Togre N**, Khatri V, Batra L, Padigel U, Goswami K. Dose-dependent prophylactic efficacy of filarial antigens glutathione-S-transferase and abundant larval transcript-2 against *Brugia malayi* challenge in *Mastomys*. *Can J Infect Dis Med Microbiol* 2024, 2024:4543922. <https://doi.org/10.1155/2024/4543922>
- Bhoj PS, Bahekar SP, Chowdhary S, Togre NS, Amdare NP, Jena L, Goswami K, Chandak H. Michael adduct of sulfonamide chalcone targets folate metabolism in *Brugia malayi* parasite. *Biomedicines* 2023, 11(3):723. <https://doi.org/10.3390/biomedicines11030723>

- Mallakuntla MK, **Togre NS**, Santos DB, Tiwari S. Implications of fragment-based drug discovery in tuberculosis and HIV. *Pharmaceuticals* 2022, 15(11):1415. <https://doi.org/10.3390/ph15111415> [verify]
- **Togre NS**, Vargas AM, Bhargavi G, Mallakuntla MK, Tiwari S. Fragment-based drug discovery against mycobacteria: the success and challenges. *International Journal of Molecular Sciences* 2022, 23(18):10669. <https://doi.org/10.3390/ijms231810669>
- Bhoj P, **Togre N**, Khatri V, Goswami K. Harnessing immune evasion strategy of lymphatic filariae: a therapeutic approach against inflammatory and infective pathology. *Vaccines* 2022, 10(8):1235. <https://doi.org/10.3390/vaccines10081235> (**#Co-corresponding author**) **Selected as Cover Story, Vaccines, Volume 10, Issue 8 (August 2022)**
- **Togre N**, Bhoj P, Goswami K, Tarnekar A, Patil M, Shende M. Human filarial proteins attenuate chronic colitis in an experimental mouse model. *Parasite Immunology* 2018a, 40(3):e12511. <https://doi.org/10.1111/pim.12511>
- **Togre N**, Bhoj P, Amdare N, Goswami K, Tarnekar A, Shende M. Immunomodulatory potential of recombinant filarial protein, rWbL2, and its therapeutic implication in experimental ulcerative colitis in mouse. *Immunopharmacol Immunotoxicol* 2018b, 40(6):483-490. <https://doi.org/10.1080/08923973.2018.1431925>
- **Togre NS**, Bhoj PS, Khatri VK, Tarnekar A, Goswami K, Shende MR, Reddy MVR. SXP-RAL family filarial protein, rWbL2, prevents development of DSS-induced acute ulcerative colitis. *Indian Journal of Clinical Biochemistry* 2018c, 33(3):282-289. <https://doi.org/10.1007/s12291-017-0671-4>
- Hande S, Sonkar V, Bhoj P, **Togre N**, Goswami K, Dash D. The role of oxidative and nitrosative stress of silver nanoparticles in human parasitic helminth *Brugia malayi*: a mechanistic insight. *Acta Parasitologica* 2021, 66(4):1212-1221. <https://doi.org/10.1007/s11686-021-00394-4>
- Bhoj PS, Bahekar S, Khatri V, Singh N, **Togre NS**, Goswami K, Chandak HS, Dash D. Role of glutathione in chalcone derivative induced apoptosis of *Brugia malayi* and its possible therapeutic implication. *Acta Parasitol* 2021, 66(2):406-415. <https://doi.org/10.1007/s11686-020-00291-2>
- Khatri V, Amdare N, Chauhan N, **Togre N**, Reddy MV, Hoti SL, Kalyanasundaram R. Epidemiological screening and xenomonitoring for human lymphatic filariasis infection in select districts in the states of Maharashtra and Karnataka, India. *Parasitol Res* 2019, 118(3):1045-1050. <https://doi.org/10.1007/s00436-019-06205-0>
- Bhoj PS, Rao S, Bahekar SP, Agrawal NR, **Togre NS**, Sharma R, Goswami K, Chandak HS, Patil MB. In vitro apoptotic effect on human lymphatic filarial parasite by piperidine derivatives and thymidine reversal study. *Parasitol Res* 2020, 119(1):165-175. <https://doi.org/10.1007/s00436-019-06492-7>
- Bhoj P, **Togre N**, Goswami K, Madharia V. Polyphenols-induced apoptosis by *Murraya koenigii* against lymphatic filarial parasite and its therapeutic implication. *Journal of Herbs, Spices & Medicinal Plants* 2019, 25(4):363-376. <https://doi.org/10.1080/10496475.2019.1633454>
- Bhoj P, **Togre N**, Bahekar S, Goswami K, Chandak H, Patil M. Immunomodulatory activity of sulfonamide chalcone compounds in mice infected with filarial parasite, *Brugia malayi*. *Indian J Clin Biochem* 2019, 34(2):225-229. <https://doi.org/10.1007/s12291-017-0727-5>
- Hande S, Goswami K, **Togre N**, Mandvikar A, Rami Reddy MV. Antifilarial actions of green tea extract and a synthetic heterocyclic thiazolidine derivative, Im8 compound in experimental mouse model. *Indian J Exp Biol* 2016, 54(11):753-757. <http://nopr.niscpr.res.in/handle/123456789/36897>
- **Togre N**, Khatri V, Nakhale M, Bhoj P, Goswami K, Tarnekar A, Patil M, Kumar S. Exploration of immune modulation by combination of filarial proteins against DSS induced colitis in mouse model. *Romanian Archives of Microbiology and Immunology* 2018d, 77(2):65–80.
- Bhoj P, Daberao S, **Togre N**, Goswami K. Antifilarial and apoptotic effect of *Cardiospermum helicacabum* leaf extract on filarial *Brugia malayi* parasite. *Romanian Archives of Microbiology and Immunology* 2019, 77(4):294–300.

Book Chapters

- Pardeshi S, Gholap AD, More M, **Togre N**, Rebello N, Giram P. Dendrimers based antibacterial and antiviral materials. In: *Antibacterial and Antiviral Functional Materials*, Volume 1. 2023:139–169.
- Goswami K, Khatri V, Amdare N, **Togre N**, Bhoj P. Helminth therapy: a promising biotherapeutic approach for autoimmune colitis. In: Garcia S, editor. *Colitis: Causes, Diagnosis and Treatment*. Nova Science Publishers; 2019.

Editor/Reviewer

Journal Editorial Roles

- Associate Editor, *Virulence* (Link). Edited articles: over 100.
- Topic Editor, *Frontiers in Cellular and Infection Microbiology* (Link)
- Review Editor, *Frontiers in Molecular Biosciences* (Link)
- Review Editor, *Frontiers in Immunology*, Vaccines and Molecular Therapeutics section (Link)
- Topic Coordinator, *Frontiers in Molecular Biosciences* (Link)

Special Issues and Topical Collections

- Guest Editor, *Cells* (MDPI), Special Issue "Alcohol-Related Neurologic Disease: Molecular Mechanisms and Therapy"
- Guest Editor, *Journal of Visualized Experiments (JoVE)*, Topical Collection "Experimental Models for Alcohol-Induced Neurovascular Dysfunction" (Link)

- Guest Editor, *Life* (MDPI)

Advisory Panels

- Topical Advisory Panel Member, *International Journal of Molecular Sciences* and *Life* (MDPI) (Link)

Peer Review

- Peer Reviewer for more than 25 journals

Professional Memberships

- National Postdoctoral Association (NPA) (#71448751)
- American Society for Microbiology (ASM) (No: 200332408)
- Life Member, Society of Biological Chemists (India) (No: 3020)
- Member, Research Society on Alcohol (RSA)
- Member, Federation of Clinical Immunology Societies (FOCIS) (No: 43574811)

Organizational skills and mentoring experience

- Vice President of the Temple University Postdoctoral Association, Temple University, Philadelphia
- Community Leader for ASM Connect, American Society for Microbiology (ASM)

Honors and Awards

2022: Cover Story, *Vaccines* (MDPI), Volume 10, Issue 8, for the article "Harnessing immune evasion strategy of lymphatic filariae: a therapeutic approach against inflammatory and infective pathology." <https://www.mdpi.com/2076-393X/10/8>

2016: Best Oral Paper Award at the 10th National Conference of the Indian Academy of Tropical Parasitology (TROPACON-2016) held at JIPMER, Pondicherry, India.

2015: Babasaheb Ambedkar National Research Fellowship for Ph.D. research by Dr. Babasaheb Ambedkar Research & Training Institute (BARTI), Pune, Maharashtra, India.

Conference Presentations

- 48th Annual Scientific Meeting, Research Society on Alcohol (RSA) / ISBRA Congress, New Orleans, LA, June 21–25, 2025. **Togre NS**, Bhoj P, Mekala N, Hancock R, Trivedi J, Winfield M, Sriram U, Rom S, Persidsky Y. *Sex differences in P2X7R-driven neuroinflammation and extracellular vesicle dynamics in alcohol-induced brain injury*. [Poster]
- 47th Annual Scientific Meeting, Research Society on Alcohol (RSA), Minneapolis, MN, June 22–26, 2024. **Togre NS**, et al. *Neuroinflammatory responses and blood-brain barrier injury in chronic alcohol exposure: role of purinergic P2X7 receptor signaling*. [Poster]
- Temple University Postdoctoral Symposium, Lewis Katz School of Medicine, Temple University, Philadelphia, PA, 2025. **Togre NS** (presenter), Bhoj P, Mekala N, Hancock R, Trivedi J, Winfield M, Sriram U, Rom S, Persidsky Y. *Sex differences in P2X7R-driven neuroinflammation and extracellular vesicle dynamics in alcohol-induced brain injury*. [Oral]
- 10th National Conference of the Indian Academy of Tropical Parasitology (TROPACON-2016), JIPMER, Pondicherry, India, November 2–6, 2016. *Immunomodulation by filarial proteins rWbL2 and rBmALT-2 to help in treatment of ulcerative colitis*. [Best Oral Paper Award]

Conference Abstracts

- **Togre N**, Bhoj P, Khatri V, Tarnekar A, Reddy MVR, Goswami K. Therapeutic potential of recombinant *Wuchereria bancrofti* L2 (rWbL2) in the treatment of DSS-induced chronic ulcerative colitis. Abstract supplement, 17th Annual Meeting of the Federation of Clinical Immunology Societies (FOCIS 2017), Chicago, IL, June 14–17, 2017.

Co-authored Abstracts and Presentations

- Sriram U, Bhoj P, Mekala N, **Togre N**, Persidsky Y. Purinergic receptor P2X7R regulates neuropsychiatric lupus. *The Journal of Immunology*. 2026;215(Supplement_1):vkag141.712. Published July 28, 2026. <https://doi.org/10.1093/jimmun/vkag141.712>
- Mekala N, Trivedi J, Bhoj P, **Togre N**, Rom S, Persidsky Y. E-cigarette and alcohol cause alveolar epithelial and blood-brain barrier injury via extracellular vesicles release and purinergic receptor signaling. 28th Scientific Conference of the Society on NeuroImmune Pharmacology (SNIP), Charleston, SC, March 10–13, 2024. Supported by NIAAA AA030841.

- Mekala N, **Togre N**, Rom S, Sriram U, Persidsky Y. Alcohol and e-cigarette exposure induce release of extracellular vesicles and their plasminogen urokinase content promoting blood-brain barrier (BBB) injury. 29th Scientific Conference of SNIP, Omaha, NE, June 8–11, 2025.
- Mekala NK, **Togre NS**, Rom S, Sriram U, Persidsky Y. Electronic cigarettes and alcohol induce alveolar epithelial and blood-brain barrier injury via P2X7 receptor signaling. 30th Scientific Conference of SNIP, Annapolis, MD, May 3–6, 2026.

Conferences Attended

- 46th Annual Scientific Meeting, Research Society on Alcohol, Bellevue, WA, June 24–28, 2023.

Training and Workshops

- Global Initiative of Academic Networks (GIAN) workshop, "Transgenic animal technology" (14 days), Department of Animal Biology, University of Hyderabad, India, July 19 to August 1, 2018.
- DBT-sponsored short-term training course, "Hands-on training programme on nano-biotechnology and use of *Drosophila* as a genetics research model: perspective in biological sciences, health and nanoscience" (14 days), Department of Biotechnology, MIET, Meerut, India, December 4–17, 2017.

Teaching and Service

- Mentored six master's students and two undergraduate students at Penn State, Temple University and MGIMS Sevagram in experimental planning, laboratory work, data interpretation, and scientific discussions
- Resource person, DBT (Government of India)-sponsored National Training Course, "Molecular techniques as applied for infectious disease research," Department of Biochemistry and JBTDRRC, MGIMS, Sevagram, India (2015, 2016 and 2017).
- Organizing Committee Member, National Symposium on "Healthy Yoga Lifestyle for Prevention of Lifestyle Diseases," JBTDRRC, Sevagram, India, September 2015.