

# SREEPARNA VAPPALA

## PERSONAL DATA

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IMMIGRATION STATUS: Permanent Resident of Canada

## EDUCATION

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SEPT 2016- Ph.D. in Pathology and Laboratory Medicine  
JAN 2023 [University of British Columbia](#), Vancouver, Canada  
THESIS SUPERVISOR: Prof. Jayachandran N. Kizhakkedathu  
**Dissertation:** *Polycationic inhibitors to target prothrombotic nucleic acids in vitro and mouse models* [\[link\]](#)  
**Emphasis:** Developed inhibitors to prevent thrombosis associated with polyanionic molecules.

AUG 2010- BS-MS Dual Degree in BIOLOGY  
MAY 2015 [Indian Institute of Science Education and Research \(IISER\), Kolkata](#), India  
THESIS SUPERVISOR: Prof. Jayasri Das Sarma  
Thesis: *Role of spike cleavage domain in viral model of multiple sclerosis*  
**Emphasis:** Studied the role of the mouse coronavirus spike cleavage domain in multiple sclerosis.

## PROFESSIONAL EXPERIENCE

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JULY 2025- **Lecturer**, [Department of Microbiology and Immunology](#)  
[University of British Columbia](#), Vancouver, Canada

MAR 2023- **Instructor I**, [Department of Biological Sciences](#)  
JAN 2025 [University of Manitoba](#), Winnipeg, Canada

## TEACHING EXPERIENCE

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### University Instructor

SEPT 2025 | **Instructor**  
Course: [SCIE 113, First-Year Seminar in Science](#)  
Faculty of Science, University of British Columbia, Vancouver  
1<sup>st</sup> year Science communication course required for all science majors (enrollment - 26)

SEPT 2024 | **Instructor**  
DEC 2024 | Course: [BIOL 1410, Anatomy of the Human Body](#)  
Biological Sciences, University of Manitoba, Winnipeg  
Instructed lecture component of the 1<sup>st</sup> year Anatomy course (enrollment - 250)

SEPT 2024 | **Instructor**  
DEC 2024 | Course: [BIOL 2520, Cell Biology](#)  
Biological Sciences, University of Manitoba, Winnipeg  
2<sup>nd</sup> year lecture-based course for biology and related majors (enrollment - 250)

MAY 2024 | **Instructor**  
JUNE 2024 | Course: [BIOL 3542, Developmental Biology](#)  
Biological Sciences, University of Manitoba, Winnipeg  
3<sup>rd</sup> year developmental biology course for students majoring in cell and developmental biology (enrollment - 40)

JAN 2024 APR 2024	<b>Instructor and Course Developer</b> Course: <a href="#">BIOL 3500, Genetics II</a> Biological Sciences, University of Manitoba, Winnipeg Advanced genetics course (3 <sup>rd</sup> and 4 <sup>th</sup> year) with a lecture and lab components (enrollment - 75)
JAN 2024 APR 2024	<b>Instructor and Course Developer</b> Course: <a href="#">BIOL 2520, Cell Biology</a> Biological Sciences, University of Manitoba, Winnipeg 2 <sup>nd</sup> year lecture-based course for biology and related majors (enrollment - 220)
SEPT 2023 DEC 2023	<b>Instructor</b> Course: <a href="#">BIOL 3542, Developmental Biology</a> Biological Sciences, University of Manitoba, Winnipeg 3 <sup>rd</sup> year developmental biology course for students majoring in cell and developmental biology (enrollment - 110)
MAY 2023 JUNE 2023	<b>Instructor and Course Developer</b> Course: <a href="#">BIOL 3542, Developmental Biology</a> Biological Sciences, University of Manitoba, Winnipeg 3 <sup>rd</sup> year developmental biology course for students majoring in cell and developmental biology (enrollment - 40)
JAN 2022 MAY 2022	<b>Sessional Lecturer and Course Coordinator</b> Course: <a href="#">BIOL 201, Introduction to Biochemistry</a> Biology Program, University of British Columbia, Vancouver 2 <sup>nd</sup> biochemistry course for non-biochemistry majors (enrollment - 250)
MAR 2020	<b>Guest lecturer</b> Course: <a href="#">BIOL 201, Introduction to Biochemistry</a> Biology Program, University of British Columbia, Vancouver 2 <sup>nd</sup> facilitated an in-class worksheet on energy transfer and reactions. (enrollment - 250)

## Other teaching experiences

JAN 2022	<b>Future Science Leaders (FSL) Fellow</b> <i>Science World, Vancouver</i> Designed and facilitated a multi-day hands-on lab on Elisa and blood typing for high school students.
JAN 2021	<b>Future Science Leaders (FSL) Fellow</b> <i>Virtually through Science world</i> Designed and facilitated a multi-day hands-on lab on disease transmission and blood typing for high school students.
AUG 2019	<b>Future Science Leaders (FSL) fellow,</b> <i>Science World, Vancouver and Surrey</i> Designed and facilitated a multi-day hands-on lab on forensic analysis, blood typing and disease transmission for high school students.

## Teaching Assistantships

JAN 2021	Teaching assistant, Biology Program, UBC Course: BIOL 201, <i>Introduction to Biochemistry</i> Duties included organizing tutorial materials, leading TA prep sessions, delivering tutorial lectures, holding office hours and marking.
NOV 2020	Graduate Academic Assistant Course: BIOL 201, <i>Introduction to Biochemistry</i> Duties included preparing question bank for Midterm-I
JAN 2020	Teaching assistant, Biology Program, UBC Course: BIOL 201, <i>Introduction to Biochemistry</i> Duties included organizing tutorial materials, leading TA prep sessions, delivering tutorial lectures, holding office hours and marking.
JAN 2019	Teaching assistant, Biology Program, UBC Course: BIOL 201, <i>Introduction to Biochemistry</i> Duties included delivering tutorial lectures, office hours and marking
JAN 2015	Teaching assistant, Department of Biological Sciences, IISER Kolkata Course: Biology Laboratory-VIII, <i>Cloning and Protein Expression</i> Duties included preparing the materials for laboratory, mini lecture, trouble shooting and designing the final assessment

## MENTORSHIP EXPERIENCE

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JULY 2025	Mentor at Bahujan Scholar's program <a href="#">Bahujan Scholars program</a> Mentoring and supporting students from disadvantaged communities by providing career guidance. Facilitated interactive Mentorship Café sessions tailored for small groups of 6-8 girls. Utilized question prompts, simple games, and 'show and tell' items to engage participants and foster meaningful interactions.
NOV 2019	STEAM Mentor at the <a href="#">Girls and STEAM Symposium</a> Facilitated interactive Mentorship Café sessions tailored for small groups of 6-8 girls. Utilized question prompts, simple games, and 'show and tell' items to engage participants and foster meaningful interactions.
SUMMER 2018	Trained summer undergraduate student Helena Son Introduced the student to basic laboratory practices and guided throughout the summer project on developing polymer based anticoagulants.
SUMMER 2018	Mentor at <a href="#">Future Science Leaders (FSL)</a> Students & Alumni Networking Event FSL is an after-school science enrichment program designed to engage curious minds with science. As a fellow, one designs and delivers multi-day biology lessons.

## RELEVANT EDUCATION RESEARCH

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### Two-stage Exam

Comparing the Effectiveness of Consensus and Non-Consensus Two-Stage Exams Formats  
Authors: Vappala, S., Scott, KG-E., and Debets, C.

*This study compares how well students learn and what they think about the consensus and non-consensus formats of two-stage exams.*

- Presented poster at [SABER Annual Meeting 2024](#), University of Minnesota, Twin Cities, July 11-14, 2024

## EDUCATIONAL LEADERSHIP

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- JUNE 2025 Organized the annual conference of the [Association for Biology Laboratory Education \(ABLE\)](#)  
Part of the organizing team with two other colleagues at the University of Manitoba, Winnipeg.
- 2024 **Member of Undergraduate Curriculum Committee**  
2025 Department of Biological Sciences, University of Manitoba  
Part of the curriculum mapping exercise for the undergraduate programs in biological sciences.
- 2023 **Course Development**  
2025 Department of Biological Sciences, University of Manitoba  
Designed the 3rd/4th year Developmental Biology (BIOL 3542), Genetics II (BIOL 3500) and 2nd year Cell Biology (BIOL 2520) courses
- 2023 **Course Coordination at U of M**  
2025 Department of Biological Sciences, University of Manitoba  
Coordinated with TAs and other markers for five biology classes at U of M
- WINTER 2022 **Course Coordination at UBC**  
Biology Program, University of British Columbia, Vancouver  
Course coordinator and instructor, also managing 10 teaching assistants.
- 2019 - 2021 **Curriculum development for [Future Science Leaders](#) at Science World, Vancouver**  
Department of Biological Sciences, University of Manitoba  
Designed the biology curriculum with hands-on activity for high school students

## PROFESSIONAL TRAINING

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- Oct 2023 New Faculty Workshop - Indigenous History in Canada
- Nov 2023 Equity Diversity and Inclusion workshop organized by the Department of Biological Sciences, University of Manitoba
- June 2023 Attended [Association for Biology Laboratory Education \(ABLE\)](#) conference at the University of California, San Diego
- May 2023 Teaching Café 2023 - Journeys into Experiential Learning.
- Apr 2023 [Introduction to lesson planning workshop](#)
- Mar 2023 [Scholarship of Teaching and Learning \(SoTL\) ethics workshop](#)
- July 2022 Attended [Society for the Advancement of Biology Education Research \(SABER\)](#) annual meeting at the University of Minnesota, Twin Cities
- Mar 2021 [Inclusive teaching workshop](#)  
Centre for Teaching and Learning, University of British Columbia, Vancouver
- Apr 2019 [Inquiry based learning workshop](#)  
Organized by Science World Vancouver for community scientists and scientists in schools, Vancouver
- Nov 2018 Became [Center for the Integration of Research, Teaching and Learning \(CIRTL\)](#) associate
- Nov 2018 [Instructional Skills Workshop](#)  
Centre for Teaching and Learning, University of British Columbia, Vancouver

## FELLOWSHIPS, SCHOLARSHIPS AND AWARDS

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- 2020-2022 President's Academic Excellence Initiative PhD Award ( 2000 CAD)
- 2020-2021 Reach the world Travel Award- International Society of Thrombosis and Hemostasis ( 2000 CAD)
- 2020-2021 Centre for Blood Research (CBR) Travel Award ( 500 CAD)
- 2019-2020 Thrombosis Hemostasis Society of North America (THSNA) Travel Award ( 1,000 USD)
- 2017-2018 Centre for Blood Research (CBR) Graduate Fellowship ( 5,000 CAD)
- 2016-2022 International Tuition Award, UBC ( 3,300 CAD)
- 2015-2016 Doctoral Recruitment Scholarship, University of Alberta ( 35,000 CAD)
- 2010-2015 [INSPIRE Scholarship](#), DEPT. OF SCIENCE AND TECHNOLOGY, GOVT. OF INDIA ( 8,000 CAD)

## RESEARCH PUBLICATIONS

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- 1 Suess, P. M., La, C. C., **Vappala, S.**, Kizhakkedathu, J. N., & Morrissey, J. H. (2025). Platelet Polyphosphate Signals Through NF $\kappa$ B to Induce Myofibroblast Differentiation. *Biomolecules*, 15(10), 1441.
- 2 Ji, H., Yu, K., Abbina, S., Xu, L., Xu, T., Cheng, S., **Vappala, S.**, Arefi, S.A., Rana, M.M., Chafeeva, I. and Drayton, M., Gonzalez, K., Liu, Y., Conway, E.M. Zhao, W., Zhao, C., & Kizhakkedathu, J. N. 2025. Antithrombotic coating with sheltered positive charges prevents contact activation by controlling factor XII–biointerface binding. *Nature materials*, 24(4), 626-636.
- 3 MacArthur, T.A., Goswami, J., Navarro, S.M., **Vappala, S.**, La, C.C., Yudin, N., Zietlow, J., Smith, S.A., Morrissey, J.H., Spears, G.M. and Bailey, K.R., Bailey, Dong, J.F., Kozar, R.A., Kizhakkedathu, J. N., Park, M.S. 2024. Inhibitors of Inorganic Polyphosphate and Nucleic Acids Attenuate in vitro Thrombin Generation in Plasma from Trauma Patients. *Shock*, 61(6), pp.848-854.
- 4 **Vappala, S.**, Smith, S. A., Kizhakkedathu, J. N., & Morrissey, J. H. (2023, May). Inhibitors of Polyphosphate and Neutrophil Extracellular Traps. In *Seminars in Thrombosis and Hemostasis*.
- 5 Herout, R., **Vappala, S.**, Hanstock, S., Moskalev, I., Chew, B. H., Kizhakkedathu, J. N., & Lange, D. (2023). Development of a High-Throughput Urosepsis Mouse Model. *Pathogens*, 12(4), 604.
- 6 La, C. C., Smith, S. A., **Vappala, S.**, Adili, R., Luke, C. E., Abbina, S., ... & Kizhakkedathu, J. N. (2023). Smart thrombosis inhibitors without bleeding side effects via charge tunable ligand design. *Nature Communications*, 14(1), 2177.
- 7 Abbina, S., La, C. C., **Vappala, S.**, Kalathottukaren, M. T., Abbasi, U., Gill, A., ... Kizhakkedathu, J. N. (2022). Influence of Steric Shield on Biocompatibility and Antithrombotic Activity of Dendritic Polyphosphate Inhibitor. *Molecular Pharmaceutics*, 19(6), 1853-1865.
- 8 **Vappala, S.**, Straus, S., Pryzdial, E. L., Conway, E., & Kizhakkedathu, J. (2021). DNA Mediated Blood Coagulation: Extracellular DNA Accelerates Fibrinogen Polymerization By Thrombin Independent of Contact Pathway. *Blood*, 138, 2101.
- 9 Yeh, H. H., Yu, K., **Vappala, S.**, Kalathottukaren, M. T., Abbina, S., Luo, H. D., Grecov, D. Kizhakkedathu, J. N. (2021). Rheological and clot microstructure evaluation of heparin neutralization by UHRA and protamine. *Journal of the Mechanical Behavior of Biomedical Materials*, 124, 104851.
- 10 La, C.C., Takeuchi, L.E., Abbina, S., **Vappala, S.**, Abbasi, U. and Kizhakkedathu, J.N., 2020. *Biomacromolecules*, 21(7), pp.2595-2621.
- 11 Singh, M., Kishore, A., Maity, Sunanda, P., Krishnarjuna, B., **Vappala, S.**, Raghothama, S., Kenyon, L.C., Pal, D. and Sarma, J.D., 2019. *Journal of Biological Chemistry*, 294(20), pp.8064-8087.
- 12 Abbina, S., **Vappala, S.**, Kumar, P., Siren, E. M., La, C. C., Abbasi, U & Kizhakkedathu, J. N. (2017). *Journal of Materials Chemistry B*, 5(47), 9249-9277.
- 13 Kotsuchibashi, Y., Lee, C. M., Constantinescu, I., Takeuchi, L. E., **Vappala, S.**, Kizhakkedathu, J. N., & Aoyagi, T. (2017). *Polymer Chemistry*, 8(47), 7311-7315.

## PRESENTATIONS

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- 2024 Comparing the Effectiveness of Consensus and Non-Consensus Two-Stage Exams Formats  
[SABER Annual Meeting 2024](#), University of Minnesota, Twin Cities, July 11-14, 2024
- 2021 DNA Mediated Blood Coagulation: Extracellular DNA Accelerates Fibrinogen Polymerization By Thrombin Independent of Contact Pathway  
[American Society of Hematology \(ASH\) Annual Meeting and Exposition, 2021](#)  
December 11-14, 2021, Atlanta, GA
- 2021 Polycationic Polymer Mediated Inhibition of the Procoagulant and Antifibrinolytic Properties of Nucleic Acids  
[International Society on Thrombosis and Haemostasis \(ISTH\) 2021](#)
- 2020 Polycationic Polymer Mediated Inhibition of the Procoagulant and Antifibrinolytic Properties of Nucleic Acids  
[THSNA Summit 2020: 5th Biennial Summit of the Thrombosis and Hemostasis Summit of North America](#),  
October 27-30, 2020, Chicago, Illinois
- 2018 A Universal Heparin Reversal Agent Demonstrates Negligible Effect on Platelets, Endothelial Cells and Reverses Profibrinolytic Activity of Heparin  
[THSNA Summit 2018: 4th Biennial Summit of the Thrombosis and Hemostasis Summit of North America](#)  
March 8-10, 2018, San Diego, California
- 2017 Inhibition of Prothrombotic Cell-Free Nucleic Acids and Neutrophil Extracellular Traps with Polycationic Inhibitors  
[Centre for blood Research, Research day 2017](#)
- 2017 Antithrombotics without Bleeding Side Effects: Inhibition of Prothrombotic Polyanions with Polycationic Inhibitors  
[Vancouver Nanomedicine day](#), Sept 27, 2017

## OUTREACH

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- MAY 2023 Workshop facilitator, Science Rendezvous, Faculty of Science, University of Manitoba
- FEB 2023 Facilitated a hands-on murder mystery workshop for the Darwin Day event, Hume Centre in partnership with Totem Resource Center, Wayanad, Kerala, India
- MAR 2020, Lead Facilitator for DNA isolation workshop
- FEB 2020 Grade 9, *Kitsilano Secondary School*
- 2021 Invited speaker- Simon Fraser University SPEAKER SERIES  
Discussed my research and career path to Grade 9-12 students and answered questions during the Q&A session
- 2021 Invited speaker to an event organized by [Kerala Shastra Sahitya Parishad](#) in India  
Discussed my research and career path to high school students in India.
- NOV 2019 Facilitator for the workshop on Infectious Diseases  
Science World, *Girls and STEAM event*
- MAY 2019 Lead Facilitator for DNA isolation workshop  
Grade 7, *JW Sexsmith School*,
- JAN 2019 Lead Facilitator for for spread of infectious diseases workshop  
Grade 9, *Kitsilano Secondary School*
- 2019 Community Scientist at Science World
- 2018 Volunteer at [Science World Vancouver](#), Canada
- NOV 2018 Facilitator for the workshop on blood typing  
Science World, *Girls and STEAM event*
- NOV 2018 Lead Facilitator for spread of infectious diseases workshop  
Grade 8 *Prince of Wales Secondary School*

## SERVICE AND LEADERSHIP ROLES

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2025- PRESENT	<b>Member of Teaching Excellence Committee and Teaching Lab Operations Committee</b> Department of Microbiology and Immunology, UBC, Vancouver
2023- 2025	<b>Hiring Committee</b> Department of Biological Sciences, University of Manitoba, Winnipeg
2023- 2025	<b>Voting member of Committee on Student Standing (CSS)</b> Faculty of Science, University of Manitoba, Winnipeg The CSS is responsible for making decisions on cases such as authorized withdrawals, deferrals, or other academic matters.
2023- 2025	<b>Member of the EDI Committee</b> Department of Biological Sciences, University of Manitoba, Winnipeg
2024 2025	<b>Member of Undergraduate Curriculum Committee</b> Department of Biological Sciences, University of Manitoba Part of the curriculum mapping exercise for the undergraduate programs in biological sciences.
2023- 2025	<b>Member of the Outreach Committee</b> Department of Biological Sciences, University of Manitoba, Winnipeg I assist in planning and staffing departmental open houses and other educational outreach activities.
2022	<b>Honours Thesis Examiner</b> Department of Biological Sciences, UBC, Vancouver
2017- 2020	<b>Member of Outreach Committee</b> Centre for Blood Research (CBR) institute, UBC, Vancouver Developed and delivered hands-on workshops for high school students and organized school visits to the Centre for Blood Research (CBR) institute.
2017- 2019	<b>Member of the Health and Wellness Committee</b> Centre for Blood Research (CBR) institute, UBC, Vancouver Organized events related to health and wellness for CBR members.
2017 2021	<b>Member of Knowledge Translation Committee</b> Centre for Blood Research (CBR) institute, UBC, Vancouver Editor and contributor to the CBR's semiannual magazine.

## BLOG POSTS AND MEDIA APPEARANCES

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- 1 [Rational Design of Universal Heparin Reversal Agent \(UHRA\) Makes it a Highly Specific Antidote to Heparins](#)  
- Blog post published in CBR's Semiannual Magazine
- 2 [Walking the Tightrope](#)  
- Blog post published in CBR's Semiannual Magazine
- 3 Designed cover page of Journal of Materials Chemistry B, [Issue 47, 2017](#)
- 4 [Norman Bethune Symposium 2019: In Review](#)  
- Blog post published in CBR's Semiannual Magazine
- 5 [The 2019 Earl Davie Symposium – Expanding the horizons of blood research](#)  
- Blog post published in CBR's Semiannual Magazine
- 6 Featured in the article- [CBR celebrates Woman in Science](#)
- 7 [UBC Biological Sciences TA spotlight](#)
- 8 [YouTube interview as part of International Women in Science Day \(2021\)](#)
- 9 [Featured in Department of Biological Sciences, University of Manitoba video](#)
- 10 [New Faculty Announcement – Department of Microbiology and Immunology](#)

## OTHER RELEVANT AND EXTRA-CURRICULAR ACTIVITIES

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2018 Private Tutor

**Company:** *Tutor Doctor*, Vancouver

Tutored more than 100 hours in subjects including undergraduate chemistry, biology, statistics and high school mathematics and sciences.

2018 Co-founder and Vice President of External Relations of UBC Omix club, Vancouver

2014 President, Nature Club, IISER Kolkata, India