

Yao-Rui Yeo

CONTACT INFORMATION	New York University 180 Madison Ave, 17th Floor New York, NY 10016	Website: https://yaoruiy9955.github.io/ E-mail: yeoy01@nyu.edu
EDUCATION	Ph.D. in Mathematics , University of Pennsylvania <i>Thesis advisor: Ching-Li Chai</i> <i>Thesis title: Mixed Carlitz motives and colored multizeta values in characteristic p</i>	2016 Aug – 2021 May
	B.A. in Mathematics , University of Minnesota <i>Honor: Summa cum laude</i>	2013 Aug – 2016 May
EMPLOYMENT	Research Scientist , New York University Senior Systems Analyst , New York University	2023 Feb – Present 2021 Aug – 2023 Feb
RESEARCH INTERESTS	Health and Disease Modeling <i>Health and welfare economics; Cost-effectiveness analysis; Decision analytic modeling</i>	
	Algebraic Number Theory and Combinatorics <i>Arithmetic and geometry of zeta functions; Special functions, graphs, and their applications</i>	
PAPERS (* = 1ST/CO-1ST)	<ol style="list-style-type: none">1. Cebisile Ngcamphalala, Yao-Rui Yeo, Jasmine Su, Mellesia Jeetoo, Dyanna Charles, Zwakele Tfwala, Nokuthula Mahlalela, Lenhle Dube, Ruben Sahabo, Tengetile Dlamini, Harriet Nuwagaba-Biribonwoha, Scott Braithwaite, <i>Determining minimum resources required by Eswatini to meet its Ending the HIV Epidemic 2030 goal</i>, JAIDS, to appear.2. Tsitsi Apollo, Yao-Rui Yeo, Owen Mugurungi, Ngwarai Sithole, Isaac Taramusi, Emmanuel Tachiwenyika, Emily Gwavava, Wanzirai Majoni, Anesu Chimwaza, Kudawashe Takarinda, Getrude Ncube, Mellesia Jeetoo, Dyanna Charles, Scott Braithwaite. <i>Case study of PEPFAR funding cuts on HIV infections and deaths: Reversing hard-won gains</i>, AIDS 39 (2025), Issue 14, 2143–2146.3. Jasmine Su, Yao-Rui Yeo, Mellesia Jeetoo, Neo Morojele, Joel Francis, Sheela Shenoi, Scott Braithwaite, <i>Cost-effectiveness of screening and treating alcohol use and depression among people living with HIV in Zimbabwe: a mathematical modelling study</i>. BMC Med. 22 (2024), No. 481.4. Yao-Rui Yeo*, <i>Algebraic independence results for colored multizeta values in characteristic p</i>, Int. J. Number Theory 19 (2023), No. 3, 677–708.5. Logan Crew*, Alexander Kirillov*, Yao-Rui Yeo*, <i>Branching rules for splint root systems</i>, Algebr. Representat. Theory 25 (2022), 963–981.6. Wan-Jin Yeo*, Yao-Rui Yeo*, Samu Taulu, <i>Towards analytical calculation of the magnetic flux measured by magnetometers</i>, Phys. Lett. A 411 (2021), 127545.7. Yao-Yu Yeo*, Yao-Rui Yeo*, Wan-Jin Yeo*, <i>A computational model for estimating the progression of coronavirus cases in the US West and East Coasts</i>, Exp. Results 1 (2020), e41.8. Wan-Jin Yeo*, Yao-Rui Yeo*, <i>Enumerating (k, l)-critical and supercritical permutations</i>, Math. Medley 41 (2015), No. 1.	
PREPRINTS	<ol style="list-style-type: none">1. Yao-Rui Yeo*, <i>Regular intersection graphs of line segments</i>.2. Yao-Rui Yeo*, <i>Equally-distributed-equivalent from an L-function viewpoint</i>.3. Yao-Rui Yeo*, <i>A functional analysis approach to analyzing inequality aversion in health</i>.4. Yao-Rui Yeo*, Mellesia Jeetoo, Dyanna Charles, Cebisile Ngcamphalala, Sheela Shenoi, Scott Braithwaite, <i>Could using DALYs rather than QALYs influence inferences from allocative efficiency results? A case study of HIV-related interventions in Southern Africa</i>.5. Yao-Rui Yeo*, Mellesia Jeetoo, Dyanna Charles, Scott Braithwaite, <i>Cost-effectiveness of implementing long acting antiretroviral therapy in Zimbabwe: A modeling study</i>.	
INVITED PRESENTATIONS	<ol style="list-style-type: none">1. Conference on Retroviruses and Opportunistic Infections, <i>Modeled comparison of well-being and quality-adjusted-life-years as HIV outcomes in Southern Africa</i>, Poster Presentation, 2026 Feb 24.	

	2. Joint Mathematics Meetings, <i>Regular intersection graphs of line segments</i> , Oral presentation, 2026 Jan 07. 3. Society for Medical Decision Making 47th Annual Meeting, <i>How much do allocative efficiency analyses change by using well-being-adjusted life-years rather than quality-adjusted life-years?</i> , Oral Presentation, 2025 June 16. 4. Conference on Retroviruses and Opportunistic Infections, <i>Cost-effectiveness of alternative targeting strategies for 3 types of PrEP in Zimbabwe</i> , Poster Presentation, 2025 Mar 11. 5. University of Pennsylvania, Algebra Seminar, <i>Colored multizeta values in characteristic p</i> , Oral Presentation, 2021 Mar 19. 6. Temple University, Fifth Annual Graduate Student Conference, <i>Branching rules for splint root systems</i> , Oral Presentation, 2019 June 01. 7. University of Minnesota, Undergraduate Honors Seminar, <i>Dessins d'enfants and superpotentials</i> , Oral Presentation, 2016 May 03. 8. University of Illinois at Chicago, Undergraduate Mathematics Symposium, <i>The Hurwitz existence problem</i> , Oral Presentation, 2015 Oct 24.
STAKEHOLDER PRESENTATIONS	1. Shelby County Health Department, <i>Allocative efficiency modeling in Memphis</i> , 3rd workshop, Onsite Presentation, 2025 Nov 13. 2. Shelby County Health Department, <i>Allocative Efficiency Modeling in Memphis</i> , 2nd workshop, Onsite presentation, 2025 May 22. 3. Shelby County Health Department, <i>Introduction to HIV intervention prioritization in Memphis</i> , Onsite Presentation, 2025 Feb 13. 4. Eswatini Ministry of Health, <i>Allocative efficiency modeling for Eswatini to meet EHE 2030 goals</i> , Online Presentation, 2023 May 10. 5. Zimbabwe Ministry of Health and Child Care, <i>Allocative efficiency modeling for Zimbabwe to meet EHE 2030 goals</i> , Online Presentation, 2023 Mar 29. 6. KwaZulu-Natal Department of Health, <i>Allocative efficiency modeling for Kwazulu-Natal to meet EHE 2030 goals</i> , Online Presentation, 2023 Mar 21. 7. New York City Department of Health and Mental Hygiene, <i>Rapid COVID-19 modeling on Delta and Omicron variants</i> , Bi-weekly Online Presentations, 2021 Aug – 2022 Dec.
INVITED LECTURES	1. University of Washington, Institute for Learning and Brain Sciences, <i>Analytical and numerical methods for special differential equations</i> , 5-Hour Lecture, 2019 Dec – 2020 Jan.
OTHER INVITES	1. New York University, <i>Poster Judge</i> , Trainee Research Day, 2025 Apr 22. 2. University of Pennsylvania, <i>Booth Designer</i> , Math Fest, 2018 – 2020.
AWARDS	Distinguished Service Award , New York City Department of Health 2021
TEACHING	Tutoring Service of New York 2021 – 2025 <i>Subjects: Mathematics, Statistics, Physics.</i> Directed Reading Program, University of Pennsylvania 2020 – 2021 <i>Alex Kalbach, Spring 2021. Topic: The Fifteen Theorem.</i> <i>Mihal Zelenin, Fall 2020. Topic: Traffic Flow Modeling and Car Accident Risk.</i> <i>Esther Guan, Spring 2020. Topic: Cryptosystems.</i> Graduate Student Instructor, University of Pennsylvania 2019 <i>MATH 240 (Calculus III), Summer 2019.</i> Teaching Assistant, University of Pennsylvania 2017 – 2021 <i>MATH 603 (Algebra), Spring 2021.</i> <i>AMCS 602 (Applied Algebra), Fall 2020.</i> <i>MATH 241 (Calculus IV), Spring 2019.</i> <i>MATH 420 (Ordinary Differential Equations), Fall 2018.</i> <i>MATH 240 (Calculus III), Spring 2018.</i> <i>MATH 371 (Algebra), Fall 2017.</i> <i>MATH 110 (Calculus for Wharton Students), Fall 2017.</i> <i>High School Summer Mathematics Academy, Summer 2017.</i>

OTHERS

Citizenship: Taiwan

Permanent Residence: USA

Music: Fellow of Trinity College London in Piano Performance