

**MIREILLE KAMARIZA, Ph.D.**  
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## **ACADEMIC APPOINTMENTS**

**Updated January 2023**

<b>Assistant Professor</b> Department of Bioengineering   University of California, Los Angeles	2023 - present
<b>Junior Fellow</b> Society of Fellows   Harvard University	2019 - 2022
<b>Postdoctoral Fellow</b>   Sabeti Lab Broad Institute of MIT and Harvard	2020 - 2022

## **EDUCATION**

2015 – 2019	<b>Doctor of Philosophy</b> , Biology Stanford University
2012 – 2015	<b>Masters of Arts</b> , Molecular and Cell Biology University of California, Berkeley
2009 – 2012	<b>Bachelors of Science</b> , Biochemistry and Chemistry University of California, San Diego
2008 – 2009	Biological Sciences San Diego Mesa Community College, San Diego

## **AWARDS AND GRANTS**

2022	11 early-career researchers to watch, Nature Medicine
2020	Chemical & Engineering News (C&EN) Talented 12 Award American Chemical Society (ACS)
2017 – 2019	Ruth L. Kirschstein Pre-Doctoral National Research Service Award (F31) National Institute of Allergy and Infectious Disease, National Institutes of Health
2016 – 2018	Diversifying Academia, Recruiting Excellence Doctoral Fellowship Vice-Provost for Graduate Education, Stanford University
2014 – 2015	Chancellor's Fellowship Office of Graduate Division, University of California, Berkeley
2012 – 2014	NSF Bridge to the Doctorate Graduate Fellowship National Science Foundation, University of California, Berkeley
2009 – 2011	Maximizing Access to Research Careers Award

National Institute of General Medical Sciences, University of California,  
San Diego

2012 – 2014

NSF Bridge to the Doctorate Graduate Fellowship  
National Science Foundation, University of California, Berkeley

## **RESEARCH EXPERIENCE**

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**Harvard University, Broad Institute of MIT and Harvard** Cambridge, MA  
Postdoctoral Fellow; Advisors: Profs. Pardis Sabeti & Ben Neale 2020 - present

- Developing CRISPR-based massively multiplexed assays to detect and surveil highly infectious pathogens in high burden regions of West Africa
- Leveraging genomic and computational technologies to discover host-pathogen factors that drive disease outcome in West Africa

**Stanford University** Stanford, CA  
Doctoral Fellow; Advisor: Prof. Carolyn Bertozzi 2015 - 2019  
*Thesis project:* Development of trehalose-dye conjugates for the rapid detection of mycobacteria with applications in research and medicine

- Supervised multiple collaborative projects around the world, including clinical studies in South Africa and Vietnam
- Trained and mentored two PhD students, three undergraduates and two high school students

**University of California, Berkeley** Berkeley, CA  
Masters Fellow; Advisor: Prof. Carolyn Bertozzi 2012 - 2015

- Optimized standard operating procedures for laboratory mycobacterial labeling
- Investigated stress response mechanisms in mycobacteria
- Co-Taught two introductory to Biochemistry courses for Biology and Chemistry majors

**University of California, San Diego** San Diego, CA  
Undergraduate Scholar; Advisor: Prof. Tracy Johnson 2010 - 2012

- Built genomic databases of the yeast *S. cerevisiae* mutant strains
- Investigated essential genes involved in *S. cerevisiae* splicing

## **ACADEMIC PUBLICATIONS (select articles)**

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1. D.A. Barr, C.Schutz, A. Balfour, M. Shey, **M. Kamariza**, C. R. Bertozzi, T. de Wet, R. Dinkele, A. Ward, K. A. Haigh, J.-P. Kanyik, V. Mizrahi, M. P. Nicol, R. J. Wilkinson, D. G. Lalloo, D. F. Warner, G. Meintjes, G. Davies. Serial Measurement of *M. Tuberculosis* in Blood from Critically-Ill Patients with HIV-Associated Tuberculosis. *eBioMedicine*. **2022**, 78:103949.  
a. Preprint: *The Lancet*. **2022**. <http://dx.doi.org/10.2139/ssrn.4000567>
2. **M. Kamariza**, S. G. L. Keyser, A. Utz, B. D. Knapp, G. Ahn, C. J. Cambier, K. C. Huang, C. R. Bertozzi. Towards *Mycobacterium tuberculosis* detection at the point-of-care: a brighter solvatochromic probe permits the detection of mycobacteria within minutes." *JACS Au*. **2021**, 1(9), 1368-1379.  
a. Preprint: *BioRxiv*. **2020**. <https://doi.org/10.1101/2020.05.29.124008>
3. T. Dai, J. Xie, Q. Zhu, **M. Kamariza**, K. Jiang, C. R Bertozzi and J. Rao. A Fluorogenic Trehalose Probe for Tracking Phagocytosed *Mycobacterium tuberculosis*. *J. Am. Chem. Soc.* **2020**, 142(36), 15259-15264.

4. **M. Kamariza**, P. Shieh, *et al.*, Rapid detection of *Mycobacterium tuberculosis* in sputum with a solvatochromic trehalose probe. *Sci. Transl. Med.* **2018**, 10(430), eaam6310.
  - a. Preprint; *BioRxiv.* **2017**. <https://doi.org/10.1101/171553>
5. **M. Kamariza**, P. Shieh, C. R. Bertozzi, Imaging Mycobacterial Trehalose Glycolipids. *Methods in Enzymology.* **2018**, 598, 355-369.

## **PROFESSIONAL ACTIVITIES**

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- **Founder**, OliLux Biosciences, Inc. 2019 - present
- **Founding Chair**, Equity in Biomedicine Seminar Series 2020 – 2021  
*Broad Institute of MIT and Harvard*
- **Co-Founder**, Stanford Black Bioscientist Organization, Stanford 2016 - 2017
- **Mentor** – Bay Area Scientists in Schools, UC Berkeley 2012 - 2015
- **Co-Founder**, OPEN-DOORS, UC San Diego 2011 - 2012

## **IN THE NEWS (select articles)**

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- **PBS NewsHour**: *In her bid to end TB, Mireille Kamariza is shattering stereotypes about scientists* by John Yang, Bria Lloyd, and Frank Carlson. 05/10/2021. Web link: <https://www.pbs.org/newshour/show/in-her-bid-to-end-tb-mireille-kamariza-is-shattering-stereotypes-about-scientists>
- **Harvard Gazette**: *The Star Chemist: How Mireille Kamariza pursued the fantastical to solve a deadly health problem* by Caitlin McDermott-Murphy. 01/29/2021. Web link: <https://news.harvard.edu/gazette/story/2021/01/an-invention-that-can-speed-up-the-race-to-stop-tb/>
- **Chemical and Engineering News (C&EN)**: *Mireille Kamariza: Diagnostics designer is fashioning a faster, cheaper way to detect tuberculosis* by Laura Howes. 08/20/2020. Web link: < <https://cen.acs.org/biological-chemistry/infectious-disease/Mireille-Kamariza/98/i31> >
- **American Chemical Society (ACS)**: *Mireille Kamariza's Personal Story of Discovery* by Bryan McBournie. 10/24/2018. Web link: < <https://axial.acs.org/2018/02/26/mireille-kamariza-discovery/> >
- **Stanford Magazine**: *A Faster, Cheaper TB Test* by Esther Landhuis. April 2017. Web link: <<https://medium.com/stanford-magazine/a-faster-cheaper-tb-test-3b9b82576184>>
- **American Chemical Society (ACS)**: *Talking Improved TB Testing with Mireille Kamariza* by Jesse Stanchak. 02/10/2017. Web link: <<http://axial.acs.org/2017/02/10/talking-improved-tb-testing>>
- **National Public Radio (NPR)**: *They Never Told Her That Girls Could Become Scientists* by Esther Landhuis. 01/07/2017. Web link: <<https://www.npr.org/sections/goatsandsoda/2017/01/07/506751969/they-never-told-her-that-girls-could-become-scientists>>

## **LANGUAGES**

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- **Native**: English, French, Kirundi
- **Novice Speaker**: Swahili, Spanish