

**MIREILLE KAMARIZA, Ph.D.**  
*Curriculum vitae updated June 2023*

410 Westwood Plaza,  
Engineering V Room 5121H  
Los Angeles, CA 90095  
Email: [kamariza@ucla.edu](mailto:kamariza@ucla.edu)

<https://kamarizalab.com>  
<https://mireillekamariza.com>  
Phone: (310) 267-5244  
Fax: (310) 794-5956

### Academic appointments

|  |                |
|--|----------------|
| <b>Assistant Professor</b><br>Department of Bioengineering<br>Chemistry-Biology Interface Program<br>Molecular Biology Interdepartmental Program<br><i>University of California, Los Angeles</i> | 2023 - present |
| <b>Junior Fellow</b><br>Advisor: Prof. Pardis Sabeti, <i>Broad Institute of Harvard and MIT</i><br>Society of Fellows, <i>Harvard University</i>   | 2019 - 2022    |

### Education

|  |             |
|--|-------------|
| <b>Doctor of Philosophy</b> , Biology<br>Advisor: Prof. Carolyn Bertozzi, Stanford University, Stanford, CA                                | 2015 – 2019 |
| <b>Masters of Arts</b> , Molecular and Cell Biology<br>Advisor: Prof. Carolyn Bertozzi, University of California Berkeley, Berkeley, CA    | 2012 – 2015 |
| <b>Bachelors of Science</b> , Biochemistry and Chemistry<br>Advisor: Prof. Tracy Johnson, University of California San Diego, La Jolla, CA | 2009 – 2012 |
| Biological Sciences<br>San Diego Mesa Community College, San Diego, CA   | 2008 – 2009 |

### Peer-reviewed publications

12. Peters JS, McIvor A, Papadopoulos AO, Masangana T, Gordhan BG, Waja Z, Otwombe K, Letutu M, **Kamariza M**, Sterling TR, Bertozzi CR, Martinson NA & Kana BD. Differentially culturable tubercle bacteria as a measure of tuberculosis treatment response. *Front. Cell. Infect. Microbiol., Sec. Molecular Bacterial Pathogenesis*. **2023**. <https://doi.org/10.3389/fcimb.2022.1064148>
11. Wang Y, Kanai M, Tan T, **Kamariza M**, Tsuo K, Yuan K, Zhou W, Okada Y, the BioBank Japan Project, Huang H, Turley P, Atkinson EG, Martin AR. Polygenic prediction across populations is influenced by ancestry, genetic architecture, and methodology. **2022**.  
Preprint: *BioRxiv* **2022**.12.29.522270; doi: <https://doi.org/10.1101/2022.12.29.522270>
10. 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.  
Preprint: *The Lancet*. **2022**. <http://dx.doi.org/10.2139/ssrn.4000567>
9. **M. Kamariza**, L. Crawford, D. S. Jones, H. Finucane. Misuse of the term ‘trans-ethnic’ in genomics research. *Nature Genetics*. **2021**, 53(11), 1520–1521.
8. **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.  
Preprint: *BioRxiv*. **2020**. <https://doi.org/10.1101/2020.05.29.124008>

7. Dinkele R, Gessner R, Koch AS, Morrow C, Gqada M, **Kamariza M.**, Bertozzi CR, Smith B, McLoud C, Kamholz A, Bryden W, Call C, Mizrahi V, Wood R, Warner DF. Capture and visualization of live *Mycobacterium tuberculosis* bacilli from tuberculosis bioaerosols. *PLoSPathogens*. **2021**, 17(2), e1009262.

Preprint: BioRxiv. **2019**. <https://doi.org/10.1101/2019.12.23.887729>

6. J. Stenger-Smith, **M. Kamariza**, I. Chakraborty, R. Ouattara, C. R. Bertozzi, and P. K. Mascharak. Enhanced Bactericidal Effects of Pyrazinamide Toward *Mycobacterium smegmatis* and *Mycobacterium tuberculosis* upon Conjugation to a {Au(I)-triphenylphosphine}+ Moiety. *ACS Omega*. **2020**, 5(12), 6826-6833.

5. B. J. Patterson, R. Dinkele, S. Gessner, C. Morrow, **M. Kamariza**, C. R. Bertozzi, A. Kamholz, W. Bryden, C. Call, D. F. Warner, and R. Wood. Sensitivity Optimisation of Tuberculosis Bioaerosol Sampling. *PLoSOne*. **2020**, 15(9), e0238193.

Preprint: MedRxiv. **2020**. <https://doi.org/10.1101/2020.05.03.20089425>

4. 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.

3. W.E. Allen, H. Altae-Tran, J. Briggs, X. Jin, G. McGee, A. Shi, R. Raghavan, **M. Kamariza**, N. Nova, A. Pereta, *et al.*, Population-scale longitudinal mapping of COVID-19 symptoms, behaviour and testing. *Nat. Hum. Behav.* **2020**, 4(9), 972-982.

Preprint: MedRxiv. **2020**. <https://doi.org/10.1101/2020.06.09.20126813>

2. **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.

Preprint: BioRxiv. **2017**. <https://doi.org/10.1101/171553>

1. **M. Kamariza**, P. Shieh, C. R. Bertozzi, Imaging Mycobacterial Trehalose Glycolipids. *Methods in Enzymology*. **2018**, 598, 355-369

## Patents/Disclosures

Carolyn R Bertozzi, **Mireille Kamariza**, and Peyton Shieh. 6/6/2019. “Methods for Detecting Mycobacteria with Solvatochromic Dye Conjugates.” US patent application 16 /321 , 815

## Research support, honors, and awards

*(Contact PI on all grant unless indicated otherwise)*

Grand Challenges Annual Meeting Call to Action, *Bill and Melinda Gates Foundation*,  
‘Scalable drug-resistance profiling of tuberculosis and malaria using mCARMEN’, 2023 – 2025

Eleven Early-Career Researchers to Watch, *Nature Medicine*, 2022

Talented 12 Award, *Chemical & Engineering News (C&EN)*, 2020

Ruth L. Kirschstein Pre-Doctoral National Research Service Award (F31), *NIAID/NIH*,  
‘Investigating a fluorogenic DMN-trehalose conjugate as a novel detection tool for  
*Mycobacterium tuberculosis*’, 2017 – 2019

Diversifying Academia, Recruiting Excellence Fellowship, *Stanford University*, 2016 – 2018

Chancellor’s Fellowship, *University of California, Berkeley*, 2014 – 2015

NSF Bridge to the Doctorate Fellowship, *University of California, Berkeley*, 2012 – 2014

Maximizing Access to Research Careers Award, *University of California San Diego*, 2009 – 2011

## External professional activities

*Co-Founder*, OliLux Biosciences, Inc.,

2019 – present

## Teaching Experience

|  |            |
|--|------------|
| <i>Instructor</i> , Concepts in molecular bioengineering laboratory ( <i>Fall 2023</i> )<br>Department of Bioengineering, UCLA   | 2023       |
| <i>Guest Speaker</i> , Introduction to Bioengineering<br>Department of Bioengineering, UCLA  | 2022       |
| <i>Guest Speaker</i> , Race and Genetics: American Biopolitics<br>Department of Anthropology, Harvard University   | 2020, 2021 |
| <i>Head Graduate Student Instructor</i> , Survey of the Principles of Biochemistry and Molecular Biology 2015<br>Department of Molecular and Cell Biology, UC Berkeley |            |
| <i>Graduate Student Instructor</i> , General Biochemistry and Molecular Biology Laboratory<br>Department of Molecular and Cell Biology, UC Berkeley                    | 2013       |

## Research supervision

### *Ph.D. Students*

|   |                |
|---|----------------|
| <b>2. Lilith A. Schwartz</b> , Department of Chemistry and Biochemistry | 2023 – present |
| <b>1. Austin Si</b> , Department of Bioengineering                      | 2023 – present |

### *Masters Students*

|  |                |
|--|----------------|
| <b>1. Shivani Kumar</b> , Department of Bioengineering | 2023 – present |
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### *Undergraduate Students*

|  |                |
|--|----------------|
| <b>6. Joshua Yap</b> , Department of Bioengineering                      | 2023 – present |
| <b>5. Michelle Lim</b> , Department of Computational and Systems Biology | 2023 – present |
| <b>4. Amelia Rodolf</b> , Department of Chemistry and Biochemistry       | 2023 – present |
| <b>3. YongJin Lee</b> , Department of Computational and Systems Biology  | 2023 – present |
| <b>2. Cara Susilo</b> , Department of Bioengineering                     | 2023 – present |
| <b>1. Adriann Brodeh</b> , Department of Bioengineering                  | 2023 – present |

### *(Prior to UCLA)*

|   |                |
|---|----------------|
| <b>Kyle Pacheko</b> , Research Associate II, Broad Institute of Harvard and MIT   | 2022 – present |
| <b>Lauren Kim</b> , undergraduate researcher, Harvard University<br>(Rhodes Scholar/MS student, Oxford University)                      | 2022 – 2023    |
| <b>Ashley Utz</b> , undergraduate researcher, Stanford University<br>(MD/PhD student, Stanford University School of Medicine)           | 2017 – 2019    |
| <b>Megha Mohanakrishnan</b> , high school researcher, Stanford University<br>(MD student, University of Cincinnati College of Medicine) | 2017 – 2019    |
| <b>Hannah Kan</b> , high school researcher, Stanford University<br>(Biomedical Engineering student, University of California Irvine)    | 2017 – 2018    |
| <b>Brian Chu</b> , undergraduate researcher, Stanford University<br>(MD student, University of Pennsylvania)                            | 2016 – 2017    |
| <b>Melodyanne Cheng</b> , high school researcher, University of California San Diego,<br>(MD student, UCLA)                             | 2010 – 2012    |

## Conferences and invited presentations (*last five years*)

*Let's Talk Science | Innovative Therapies: From The Bench to Bedside – UCLA Life Sciences*, Invited Speaker, “Towards Tuberculosis control: Novel dyes for point of care detection of *Mycobacterium tuberculosis*”. *Virtual* – May 2023

*Department of Chemistry and Biochemistry, Chemical Biology Seminar Series - UCLA*, Invited Speaker,

*Mireille Kamariza, Ph.D.*

“Engineering versatile imaging systems to detect and study infectious microbes”. *Los Angeles, CA* – April 2023

*American Society for Biochemistry and Molecular Biology 2023*, Invited Speaker,  
“Fluorogenic probes for the point-of-care detection of tuberculosis”. *Seattle, WA* – March 2023

*Infectious Disease Seminar Series – Genentech Inc.*, Invited Speaker,  
“Engineering versatile imaging systems to detect infectious diseases”. *San Francisco, CA* – February 2023

*COVID and Beyond: Novel Approaches to Global Infectious Diseases (H5-2023)– Keystone Conference*,  
Selected Speaker, “Developing CRISPR-Cas13 Diagnostic Assays Against Bloodborne Pathogens”.  
*Brussels, Belgium* – October 2022

*Department of Chemistry and Biochemistry - UCLA*, Invited Speaker,  
“Environment-sensitive probes for point-of-care detection of live cells”. *Los Angeles, CA* – March 2022

*Department of Chemistry – Andrews University*, Invited Speaker,  
“Environment-sensitive probes for point-of-care detection of live cells”. *Virtual* – March 2022

*Department of Bioengineering - UCLA*, Invited Speaker,  
“Engineering versatile imaging systems to study infectious microbes”. *Los Angeles, CA* – February 2022

*Division of Chemistry and Chemical Engineering – Caltech*, Invited Speaker,  
“Environment-sensitive probes for point-of-care detection of live cells”. *Los Angeles, CA* – February 2022

*Department of Pharmacology – Johns Hopkins University*, Invited Speaker,  
“Environment-sensitive probes for point-of-care detection of live cells”. *Baltimore, MD* – February 2022

*Department of Chemistry and Chemical Biology – Harvard University*, Invited Speaker,  
“Environment-sensitive probes for point-of-care detection of live cells”. *Virtual* – February 2022

*Department of Computational Precision Health – UCB/UCSF*, Invited Speaker,  
“Using biochemical tools to improve point-of-care diagnosis of infectious diseases”. *Virtual* – February 2022

*Department of Biochemistry – Stanford School of Medicine*, Invited Speaker,  
“Fluorogenic probes for the point-of-care detection of infectious diseases”. *Stanford, CA* – January 2022

*Department of Microbiology, Immunology and Molecular Genetics - UCLA*, Invited Speaker,  
“Engineering versatile imaging systems to detect and study infectious microbes”. *Virtual* – December 2021

*Department of Chemistry - NYU*, Invited Speaker,  
“Solvatochromic trehalose probe for point-of-care tuberculosis diagnosis”. *New York City, NY* – December 2021

*Bringing Chemistry to Life Podcast Series – Thermo Fisher Scientific*, Invited Speaker,  
“Biorthogonal Chemistry, tuberculosis, and making the best of opportunities”. *Virtual* – October 2021

*Convergence Seminar – Gladstone Institutes*, Invited Speaker,  
“Environment-sensitive probes for point-of-care detection of live cells”. *Virtual* – September 2022

*Department of Chemistry and Chemical Biology Seminar – Harvard University*, Invited Speaker,  
“Fluorogenic probes for the point-of-care detection of infectious diseases”. *Cambridge, CA* – September 2021

*Presidential Symposium, American Chemical Society National Conference*, Invited Speaker,  
“Fluorogenic probes for the point-of-care detection of infectious diseases”. *Virtual* – August 2021

*20<sup>th</sup> Annual NIH Chemistry-Biology Symposium –University of Minnesota*, Invited Speaker,  
“Fluorogenic probes for the point-of-care detection of infectious diseases”. *Virtual* – May 2021

*Department of Molecular and Cellular Biology – Harvard University*, Invited Speaker,  
“Fluorogenic probes for the point-of-care detection of infectious diseases”. *Virtual* – May 2021

*Department of Immunology and Infectious Diseases – Harvard University*, Invited Speaker,

“Fluorogenic probes for the point-of-care detection of infectious diseases”. *Virtual* – February 2021

*Stanford Queer Perspectives Speaker Series 2020 – Stanford University*, Invited Speaker,

“My Journey in Science: Building Equitable BioMedicine”. *Virtual* – November 2020

*Department Chemistry and Chemical Biology – Rensselaer Polytechnic Institute*, Invited Speaker,

“The power of solvatochromism: using environment-sensitive probes to diagnose tuberculosis”. *Virtual* – October 2020

*STANFORD.BERKELEY.UCSF Next Generation Faculty Symposium 2020*, Invited Speaker,

“Towards Equitable BioMedicine,”. *Virtual* – October 2020

*Infectious Disease and Molecular Pathogenesis Seminar – Broad Institute of Harvard and MIT*, Invited Speaker,

“Detection of Mycobacterium tuberculosis using solvatochromic probes” *Virtual* – September 2020

*C&EN Futures Festival – American Chemical Society*, Award Presentation,

“Solvatochromic trehalose probe for point-of-care tuberculosis diagnosis in developing countries” *Virtual* – August 2020

*The Curie Symposium Institute of Protein Design – University of Washington Seattle*, Invited Speaker,

“Towards Mycobacterium tuberculosis detection at the point-of-care: a brighter solvatochromic probe permits the detection of mycobacteria within minutes.” *Seattle, WA*. November 2019

*Annual American Chemical Society Meeting 2019*, Selected Speaker,

“Developing a better tuberculosis test for point-of-care diagnosis.” *Orlando, FL*. March 2019

*National Institute of Allergy and Infectious Diseases – National Institute of Health*, Invited Speaker,

“Solvatochromic trehalose probe for point-of-care tuberculosis diagnosis in developing countries” *Bethesda, MD*, February 2018

### Service activities

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|---|----------------|
| <i>Faculty Judge</i> , UC Systemwide Bioengineering Symposium, UC Berkeley                | 2023           |
| <i>Faculty Mentor</i> , Amgen Scholars Symposium, UCLA                                    | 2023           |
| <i>Faculty Mentor</i> , Competitive Edge Program, UCLA                                    | 2023           |
| <i>Faculty Judge</i> , Bioengineering Capstone, UCLA                                      | 2023           |
| <i>Member</i> , Biomedical Engineering Society  | 2021 – present |
| <i>Member</i> , American Society for Biochemistry and Molecular Biology                   | 2021 – present |
| <i>Founding Chair</i> , Equity in Biomedicine Seminar, Broad Institute of Harvard and MIT | 2020 – 2021    |
| <i>Co-Founder</i> , Stanford Black Bioscientist Organization, Stanford University         | 2016 - 2017    |
| <i>Member</i> , American Chemical Society   | 2015 – present |
| <i>Mentor</i> , Bay Area Scientists in Schools, UC Berkeley                               | 2012 - 2015    |
| <i>Co-Founder</i> , OPEN-DOORS, UC San Diego  | 2011 - 2012    |

### Thesis Committee Membership

|   |                |
|---|----------------|
| Barath Palanisamy, Bioengineering (Ph.D.), Advisor: Dino Di Carlo | 2023 – present |
| Andrew Ramirez, Bioengineering (Ph.D.), Advisor: Aaron Meyer      | 2023 – present |