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**BIOGRAPHICAL SKETCH****DO NOT EXCEED FIVE PAGES.**

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**NAME: Velloza, Jennifer**

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**eRA COMMONS USER NAME (credential, e.g., agency login): JVELLOZA**

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**POSITION TITLE: Assistant Professor In Residence, Department of Epidemiology & Biostatistics, UCSF**

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**EDUCATION/TRAINING**

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| INSTITUTION AND LOCATION                           | DEGREE<br>(if applicable) | Completion<br>Date<br>MM/YYYY | FIELD OF STUDY          |
|----------------------------------------------------|---------------------------|-------------------------------|-------------------------|
| Columbia University, New York, NY, USA             | BA                        | 05/2010                       | Neuroscience & Behavior |
| University of North Carolina, Chapel Hill, NC, USA | MPH                       | 05/2013                       | Health Behavior         |
| University of Washington, Seattle, WA, USA         | PhD                       | 05/2019                       | Epidemiology            |
| University of Washington, Seattle, WA, USA         | Postdoctoral              | 03/2022                       | Implementation Science  |

**A. Personal Statement**

I am an Assistant Professor in Residence in the Department of Epidemiology & Biostatistics at the University of California, San Francisco (UCSF) and Co-Director of the UCSF Partnerships for Research in Implementation Science for Equity (PRISE) Center. My research focuses on advancing the development and delivery of effective bio-behavioral HIV prevention interventions in resource-limited settings, particularly for adolescent girls and young women. I have conducted clinical trials and collaborative effectiveness-implementation research in Southern and Eastern Africa since 2011 and my toolkit includes skills in behavioral change theory, mixed methods, causal inference, human-centered design, implementation science, and complex randomized trial designs. My long-term goal is to advance the delivery of effective HIV prevention interventions at scale, through holistic, person-centered, and differentiated care models and novel adherence measurement approaches.

I have a track record of NIH funding leading complex randomized trials of HIV pre-exposure prophylaxis (PrEP) adherence support approaches for adolescent girls and young women with the proposed study teams in South Africa and Kenya. I am Principal Investigator (PI) of an NIMH R00 award testing an integrated PrEP adherence and mental health counseling intervention, which includes use of the urine point-of-care assay developed by the UCSF Hair Analytical Laboratory, for South African adolescent girls in a hybrid implementation-effectiveness randomized trial. I am also PI of an NIMH R01 award conducting a cluster randomized trial to evaluate the impact of a household- and school-based agriculture intervention on HIV prevention, food insecurity, and mental health outcomes among 400 adolescent girls and their caregivers in Kenya. I have extensive experience with motivational counseling interventions based on PrEP drug levels (“drug-level feedback”) for PrEP adherence support and with the specific urine assay being used in this proposal. I was the Project Director leading operations for an NIMH R01 trial evaluating differentiated PrEP adherence support models, including drug-level feedback via blood-based metrics, for 350 adolescent girls and young women in South African HIV clinics using a sequential multiple assignment randomized trial (SMART) design. I also led qualitative data analyses exploring acceptability of the urine assay in our Kenyan pilot study of the assay (called **P**oint of Care **U**rine Assay for **M**onitoring **A**dherence, or “PUMA”). I am currently Co-Investigator on an NIAID-funded R01 to test the effectiveness of our urine assay in improving antiretroviral therapy adherence in the context of HIV treatment for adults living with HIV. I collaborated on a Bill & Melinda Gates Foundation-funded pilot study assessing acceptability and feasibility of our urine point-of-care assay and accompanying drug-level feedback for adolescent girls and young women in South Africa and Kenya (“INSIGHT”).

Prior to my work as an independent investigator, I received several NIH-funded mentored training awards to build this expertise in PrEP trial design, adherence measurement, and community-engaged research in Kenya and South Africa. During my F31-funded doctoral training and as a T32-funded postdoctoral fellow, I developed approaches to measure PrEP adherence, including comparisons of long-term and short-term pharmacologic measures (with Dr. Gandhi), assessments of prevention-effective PrEP adherence, and mixed-methods evaluations of pharmacologic adherence assessment with motivational drug-level feedback” counseling.

For the current proposal (entitled, “A hybrid effectiveness-implementation trial of a urine point-of-care assay to increase PrEP adherence among women in Kenya and South Africa”), I will serve as Principal Investigator and

will oversee all aspects of this research. I will work with the Co-Investigators and study teams, with whom I have collaborated on PrEP adherence effectiveness and implementation trials among young women in the past, to conduct our specific aims. We are very hopeful that the results of this grant will improve HIV prevention outcomes for adolescent girls and young women worldwide.

Ongoing and recently completed projects that I would like to highlight include:

NIMH R00 MH123369

Velloza (PI)

01/11/21 – 02/28/25

Adaptation and optimization of the Friendship Bench mental health intervention for adolescent girls and young women in South African PrEP delivery settings

NIMH R01 MH138256

Velloza, Weiser, Onono (MPI)

01/08/24 – 05/31/29

Assessing the effects of a multisectoral climate-smart agricultural intervention on the reproductive and sexual health of adolescent girls and young women

NIAID R01 AI143340

Gandhi (PI), Role: Co-Investigator

09/24/18 – 08/31/23

Point-of-care urine monitoring of adherence (PUMA): testing a real-time urine assay of tenofovir in PrEP

NIAID R01 AI143340 (R01 renewal)

Gandhi (PI), Role: Co-Investigator

02/15/24 – 01/31/29

Randomized Trial to Optimize Virologic Suppression Rates Using a Point of Care Urine Monitoring Assay, ROVING-PUMA

NIMH R01 MH114544

Celum, Delaney-Moretlwe (MPI), Role: Co-Investigator, Project Director

08/01/17 – 05/31/23 (NCE)

PrEP for young South African women: Evaluating uptake by risk screening or a decision support tool and scaled adherence support using a SMART design

NIH/NIMH R01 MH095507

Baeten (PI), Role: Co-Investigator

08/10/11 – 08/31/22

Delivery of integrated PrEP and ART for HIV prevention for couples in Kenya

Bill & Melinda Gates Foundation INV-004743

Celum (PI), Role: Co-Investigator

03/03/21 – 03/31/26

Phase 3 development of the islatravir (EFdA) monthly oral formulation ("INSIGHT")

Citations:

- a. **Velloza J**, Bacchetti P, Hendrix CW, Murnane P, Hughes JP, Li M, Curlin M, Holtz TH, Mannheimer S, Marzinke MA, Amico KR, Liu A, Piwowar-Manning E, Eshleman SH, Dye BJ, Gandhi M, Grant RM, HPTN 067/ADAPT Study Team. Short and long-term pharmacologic measures of HIV pre-exposure prophylaxis use among high-risk men who have sex with men in HPTN 067/ADAPT. *JAIDS*. 2019; 82(2):149-158 [original work]. doi: 10.1097/QAI.0000000000002128. PMID: PMC6749964.
- b. **Velloza J**, Donnell D, Hosek S, Anderson PL, Chirenje ZM, Mgodini N, Bekker LG, Marzinke MA, Delany-Moretlwe S, Celum C, for the HPTN 082 study team. Alignment of PrEP adherence with periods of HIV risk among adolescent girls and young women in the HPTN 082 study in South Africa and Zimbabwe. *Lancet HIV*. 2022; 9(10): e680-689. [original work]. doi: 10.1016/S2352-3018(22)00195-3. PMID: PMC9530001
- c. **Velloza J**, Poovan N, Meisner A, Ndlovu N, Ndimande-Khoza N, Grabow C, Zwane P, Mbele S, Molefe M, Donnell D, Baeten JM, Hosek S, Celum C, Delany-Moretlwe S. Adaptive HIV pre-exposure prophylaxis adherence interventions for young women in Johannesburg, South Africa: a sequential multiple-assignment randomised trial. *Lancet HIV*. 2024 (e-pub). doi: 10.1016/S2352-3018(24)00268-6.
- d. Gandhi M, Glidden DV, Chakravarty D, Wang G, Biwott C, Mogere P, Maina G, Njeru I, Kiptinness C, Okello

P, Spinelli MA, Chatterjee P, **Velloza J**, Ogello V, Medina-Marino A, Okochi H, Mugo NR, Ngure K. Impact of a point-of-care urine tenofovir assay on adherence to HIV pre-exposure prophylaxis among women in Kenya: a randomised pilot trial. *Lancet HIV*. 2024; 11(8):e522-e530 [original work]. doi: 10.1016/S2352-3018(24)00125-5. PMID: PMC11376217.

## **B. Positions, Scientific Appointments, and Honors**

### **Positions and Scientific Appointments**

|                |                                                                                                                                     |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 2024 – present | Co-Director, PRISE Center, University of California San Francisco, CA, USA                                                          |
| 2022 – present | Assistant Professor In Residence, Department of Epidemiology & Biostatistics, University of California San Francisco, CA, USA       |
| 2022 – present | Associate Program Director for Curriculum, Implementation Science Training Program, University of California San Francisco, CA, USA |
| 2022 – present | Affiliate Faculty, Wits RHI, University of the Witwatersrand, Johannesburg, South Africa                                            |
| 2022 – present | Affiliate Faculty, Department of Global Health, University of Washington, WA, USA                                                   |
| 2018 – 2022    | Consultant, World Health Organization, Geneva, Switzerland                                                                          |
| 2019 – 2022    | Postdoctoral Fellow, Department of Global Health, University of Washington, WA, USA                                                 |
| 2015 – 2019    | Pre-doctoral Fellow, Department of Global Health, University of Washington, WA, USA                                                 |
| 2014 – 2015    | Study Manager, Doctors Without Borders, Nhlanguano, Swaziland                                                                       |
| 2013 – 2014    | Associate in Research, Duke Global Health Institute, Duke University, NC, USA                                                       |
| 2011 – 2013    | Research Fellow, FHI 360, NC, USA                                                                                                   |
| 2010 – 2011    | Research Assistant, Jacobi Medical Center, NY, USA                                                                                  |

### **Other Experience and Professional Memberships**

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|----------------|-------------------------------------------------------------------------------------|
| 2022 – present | Deputy Editor, Journal of the International AIDS Society                            |
| 2015 – present | Mentor, Columbia University Women's Mentoring Program                               |
| 2019 – 2020    | Faculty, International Conference on HIV Treatment and Prevention Adherence (IAPAC) |
| 2016 – 2018    | Member, Society of Epidemiological Research (SER)                                   |

### **Honors**

|             |                                                                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 2024        | UCSF CFAR Early Career Award for Excellence in Sociobehavioral Research                                                              |
| 2022        | IAPAC "Rising Star" Early HIV Adherence Researcher Award                                                                             |
| 2021 – 2023 | Scholar, HIV, Infectious Disease, and Global Health Implementation Research Institute (HIGH IRI), Washington University in St. Louis |
| 2019 – 2021 | University of Washington NIAID T32 STD and AIDS Postdoctoral Fellowship recipient                                                    |
| 2019        | Outstanding PhD Student Award, University of Washington Department of Epidemiology                                                   |
| 2019        | Distinguished Dissertation Award Nominee, University of Washington                                                                   |
| 2018 – 2019 | Magnuson Scholarship, University of Washington                                                                                       |
| 2018        | Society for Epidemiologic Research (SER) Dissertation Scholarship                                                                    |
| 2018, 2020  | HIV Research for Prevention (R4P) Scholarship                                                                                        |
| 2017 – 2019 | NIH F31 Pre-doctoral Fellowship, National Institute of Mental Health                                                                 |
| 2017, 2018  | Young Investigator Award, Conference on Retroviruses and Opportunistic Infections (CROI)                                             |
| 2017        | Remak Scholarship, University of Washington School of Public Health                                                                  |
| 2017        | Global Opportunities Health Fellowship, University of Washington                                                                     |
| 2017        | CFAR Social & Behavioral Sciences Research Network (SBSRN) Conference Scholar                                                        |
| 2015        | Top Scholar Pre-doctoral Award, University of Washington School of Public Health                                                     |
| 2012 – 2013 | UNC-FHI 360 Graduate Research Fellowship                                                                                             |
| 2008 – 2010 | Dean's List, Columbia University                                                                                                     |
| 2006 – 2010 | Named Scholarship Award, Columbia University                                                                                         |

## **C. Contribution to Science**

- Advances in HIV risk and ARV adherence measurement:** HIV studies define "successful ARV use" with self-report, electronic, and/or pharmacologic measures that quantify pill taking during a period of time. Pharmacologic assays quantify recent (urine, plasma) and longer-term (dried blood spots, hair) adherence. I have conducted analyses to understand factors associated with short and long-term PrEP adherence which demonstrated the complementarity of these adherence metrics. I also analyzed associations between short- and long-term adherence metrics and self-reported adherence, demonstrating superiority of pharmacologic assays. However, PrEP use need not be lifelong and existing PrEP adherence metrics have generally not

considered pill taking specifically during periods of HIV risk (“prevention-effective adherence”). I have advanced prevention-effective adherence measurement by leading studies assessing the alignment of PrEP adherence with sexual behavior and incident STIs (as markers of HIV risk) and redefining “HIV risk” measurement. I found that PrEP dosing was significantly associated with periods of HIV risk in the HPTN 082 cohort, indicating that young women are able to successfully take PrEP around times of need despite low overall adherence levels during follow-up. I subsequently developed and validated an HIV risk perception tool, which quantified the associated between relationship dynamics and PrEP initiation and adherence.

- a. **Velloza J**, Gandhi M, Hendrix C, Bacchetti P, Murnane P, Hughes JP, Li M, Curlin M, Holtz TH, Mannheimer S, Marzinke MA, Amico KR, Piwowar-Manning E, Eshleman SH, Grant RM, HPTN 067/ADAPT Study Team. Pharmacologic measures of PrEP adherence among high-risk MSM in HPTN 067/ADAPT. Poster Presentation, Conference on Retroviruses and Opportunistic Infections (CROI), Boston, MA, USA, 4-7 March, 2018.
- b. **Velloza J**, Chakravarty D, Glidden DV, Maina G, Biwott C, Kiptinness C, Spinelli MA, Okochi H, Chatterjee P, Sedlander E, Mugo N, Ngure K, Gandhi M. Self-reported PrEP use is associated with short and long-term pharmacologic metrics in Kenyan women. Poster Presentation, CROI, San Francisco, CA, USA, 9-12 March, 2025.
- c. Poovan N\*, **Velloza J**, Ndlovu N, Grabow C, Mkwanzazi E, Khoza N, Meisner A, Donnell D, Gandhi M, Hosek S, Celum C, Delany-Moretlwe S. Performance and acceptability of a urine point-of-care test for drug-level feedback counseling on PrEP use among young women in South Africa. Oral abstract, 7<sup>th</sup> IAPAC Conference, Washington DC, 11-13 July 2022.
- d. **Velloza J**, Mujugira A, Muwonge T, Boyer J, Nampewo O, Badaru J, Ssebuliba T, Stalter RM, Stein G, Baeten JM, Celum C, Heffron R. A novel “HIV Salience and Perception” scale is associated with PrEP dispensing and adherence among adolescent girls and young women in Kampala, Uganda. *AIDS & Behavior*. 2023; 27(1):279-289 [original work]. PMID: PMC9805472.

**2. Design and evaluation of person-centered HIV adherence support interventions:** Ending the HIV epidemic will require effective biomedical HIV prevention and treatment modalities, offered alongside tailored, person-centered adherence support that meets the mental and physical needs of clients. I have led studies evaluating differentiated PrEP adherence support approaches for young women in Kenya and South Africa. For example, I was the Project Director leading operations for the PrEP SMART trial, a sequential multiple assignment randomized trial assessing stepped, adaptive PrEP support approaches for young women in South Africa, including problem-based counseling and adherence monitoring using urine and dried blood spot assays. We found high overall adherence in the cohort, suggesting that a differentiated package of services is effective in supporting PrEP adherence. In prior work in Eastern Africa, I contributed to studies of a tablet application for person-centered ART and PrEP counseling, integrated depression screening with ART and PrEP delivery, and a motivational interviewing intervention for alcohol reduction and HIV prevention.

- a. **Velloza J**, Poovan N, Ndlovu N, Khoza N, Morton JF, Omony J, Mkwanzazi E, Grabow C, Donnell D, Munthali R, Baeten JM, Hosek S, Celum C, Delany-Moretlwe S. Adaptive HIV pre-exposure prophylaxis adherence interventions for young South African women: Study protocol for a sequential multiple assignment randomized trial. *PLOS ONE*. 2022; 17(4):e0266665 [original work]. PMID: PMC9007385.
- b. **Velloza J**, Ngure K, Kiptinness C, Quame-Amaglo J, Thuo N, Dew K, Kimani M, Gakuo S, Unger J, Kolko B, Baeten JM, Celum C, Mugo N, Heffron R. A clinic-based tablet application to support safer conception among HIV serodiscordant couples in Kenya: feasibility and acceptability study. *mHealth*. 2019; 5:4 [original work]. PMID: PMC6414336.
- c. **Velloza J**, Njoroge J, Ngure K, Thuo N, Kiptinness C, Momanyi R, Ayub S, Gakuo S, Mugo N, Simoni J, Heffron R. Cognitive testing of the PHQ-9 for depression screening among pregnant and postpartum women in Kenya. *BMC Psychiatry*. 2020; 20(1):31 [original work]. PMID: PMC6990517.
- d. **Velloza J**, L'Engle KL, Mwarogo P, Chokwe J, Magaria L, Sinkale W, Kingola N. Stages and processes of change utilized by female sex workers participating in an alcohol-reduction intervention in Mombasa, Kenya. *Substance Use & Misuse*. 2015; 50(13):1728-1737 [original work].

**3. Implementation science approaches to enhance HIV prevention and treatment service delivery:** My current research focuses largely on promoting the scale-up of HIV services in resource-limited settings, often using hybrid effectiveness-implementation trial designs. My NIMH K99/R00 study explored multi-level implementation barriers to integrated PrEP and depression service delivery for young women in South Africa, leading to our current hybrid trial testing a behavioral intervention alongside implementation strategies around demand-creation and lay counselor supervision. I previously led an NIMH R01 administrative

supplement that identified implementation strategies to maintain PrEP delivery during the COVID-19 pandemic in Kenya, including multi-month PrEP dispensing and home-based or remote adherence support. I also contributed to two systematic reviews demonstrating gaps in the measurement and reporting of behavioral implementation science constructs, including acceptability, in HIV prevention and treatment studies. This research informed my contributions on two recent WHO guidelines on behavioral HIV prevention approaches for adolescents and differentiated HIV service delivery models.

- a. **Velloza J**, Ndimande-Khoza N, Mills L, Concepcion T, Gumede S, Chauke H, Verhey R, Chibanda D, Hosek S, Weiner BJ, Celum C, Delany-Moretlwe S. Integrating a mental health intervention into PrEP services for South African young women: a human-centred implementation research approach to intervention development. *JIAS*. 2024; Suppl 1(Suppl 1):e26274 [original work]. PMID: PMC11224591.
- b. **Velloza J**, Roche SD, Owidi EJ, Irungu EM, Dollah A, Kwach B, Thuo NB, Morton JF, Mugo N, Bukusi EA, O'Malley G, Ngure K, Baeten JM, Mugwanya KK. HIV pre-exposure prophylaxis during the COVID-19 pandemic: qualitative results from a PrEP implementation project in Kenya. *JIAS*. 2023; 26(2):e26055 [original work]. PMID: PMC9899492.
- c. Ortblad KF, Sekhon M, Wang L, Roth S, van der Straten A, Simoni J, **Velloza J**. Acceptability assessment in HIV prevention and treatment intervention and service delivery research: a systematic review and qualitative analysis. *AIDS & Behavior*. 2023; 27(2):600-617 [original work]. PMID: PMC9868192.
- d. **Velloza J**, Liu AY, Katz AWK, van der Straten A, Siegler AJ, Scott H, Wilde G, Lockard A, Christie RH, Buchbinder SP. Acceptability of an automated directly observed therapy (DOT) application for PrEP adherence support among young men who have sex with men: a qualitative exploration. *AIDS Care*. 2024; 1-15 [original work]. PMID: PMC39222964.

**4. Psychosocial and behavioral factors associated with ARV adherence:** I have led quantitative and qualitative analyses exploring factors associated with ART and PrEP adherence, to inform future priorities around HIV interventions. Using causal inference methods from the Partners Demonstration Project cohort, I found that depressive symptoms were significantly associated with lower ART and PrEP adherence among women in Kenya, South Africa, and Zimbabwe. In a subsequent analysis using group-based trajectory modeling, I found that depressive symptoms commonly persist in this population despite standard-of-care counseling. I led qualitative work to explore narratives around psychosocial and behavioral factors influencing PrEP adherence for young women. We found that PrEP stigma negatively influences PrEP adherence among young women in South Africa and can reduce self-esteem and social support over time. Lastly, I have mentored students on exploring associations between psychosocial factors and viral non-suppression in African cohorts. Together, these results highlight the need for integrated mental health, stigma reduction, and HIV services for women in Southern and Eastern Africa and informed my K99/R00 and R01 research.

- a. **Velloza J**, Hosek S, Donnell D, Anderson PL, Chirenje M, Mgodini N, Bekker LG, Delany-Moretlwe S, Celum C. Assessing longitudinal patterns of depressive symptoms and the influence of symptom trajectories on PrEP adherence among adolescent girls in HPTN 082. *J Intl AIDS Soc*. 2021; 24(Suppl 2):e25731 [original work]. PMID: PMC8222844.
- b. **Velloza J**, Khoza N, Scorgie F, Chitukuta M, Mutero P, Mutiti K, Mangxilana N, Nobula L, Bulterys MA, Atujuna M, Hosek S, Heffron R, Bekker LG, Mgodini N, Chirenje M, Celum C, Delany-Moretlwe S. The influence of HIV-related stigma on PrEP disclosure and adherence among adolescent girls and young women in HPTN 082: a qualitative study. *Journal Int AIDS Soc*. 2020; 23(3):e25463. PMID: PMC7060297.
- c. Concepcion T\*, **Velloza J**, Kemp CG, Bhat A, Bennett IM, Rao D, Polyack CS, Ake JA, Esber A, Dear N, Maswai J, Owuoth J, Sing'oei V, Bahemana E, Iroezindu M, Kibuuka H, Collins PY. Perinatal depressive symptoms and viral non-suppression among a prospective cohort of pregnant women living with HIV in Nigeria, Kenya, Uganda, and Tanzania. *AIDS & Behavior*. 2023; 27(3):783-795 [original work]. PMID: PMC9944362.
- d. **Velloza J**, Watt MH, Choi KW, Abler L, Kalichman SC, Skinner D, Pieterse D, Sikkema KJ. HIV/AIDS-related stigma in South African alcohol-serving venues and its potential impact on HIV disclosure, testing, and treatment-seeking behaviours. *Global Public Health*. 2015; 10(9):1092-1106 [original work]. PMID: PMC4519431.

\*Indicates first-author is a mentee

**Complete List of Published Work in MyBibliography:**

<https://www.ncbi.nlm.nih.gov/myncbi/1jQQtYKHakGQI/bibliography/public/>