Slide 1:

Who is the WHRC? We are! As of July 2019, there are 23 WHRC members, most of whom are pictured here.

The WHRC is a cross-network working group of the Legacy Project comprised of women who are leaders in women’s health and HIV from around the United States. With community and staff representatives from all five NIH-funded HIV/AIDS clinical trials networks, this group provides culturally appropriate guidance and leadership in development, implementation, and dissemination of information about HIV research focused on and responsive to the needs of cisgender and transgender women and girls in the United States. The WHRC works to raise the visibility of issues related to HIV in women in the US and promote awareness of scientific research for women in disproportionately impacted communities.

Slide 2:

Here’s where current WHRC members are located.

The WHRC focuses on advocating for HIV research with women living in the United States but operates with a comprehensive awareness of the potential for American women to benefit from HIV research that is being conducted internationally. To that end, WHRC’s focus is domestic, but its interests are both global and optimistic.
The WHRC is proud of all the women who contribute to HIV cure research as well as HIV research overall:

- All 5 NIH-funded research networks are led / co-led by women as Network Principal Investigators / Chairs
- Network Directors
- Laboratory Center Principal Investigators
- Statistical and Data Management Center Principal Investigators
- Women’s Health Inter-Network Scientific Committee
- Advocates
- Front desk
- Managers
- Recruiters

18.2 million women estimated to be living with HIV globally.
One in four PLHIV in the US is a woman.
Racial disparities in the US where women of color are the most affected group among all women.
Only about half of cis women with HIV in the US have reached viral suppression. The data are clear: if researchers develop a cure for HIV, it needs to work for women.

Slide 8:
Zeroing in further on the US...
While HIV incidence among cis women has been steadily declining for the past decade or so, there are still over 7,000 cis women diagnosed with HIV in the US annually. Source: Centers for Disease Control and Prevention. HIV and Women, 2017. 

Slide 9:
Take-home message: Women need a cure for HIV. While all clients under Ryan White Care exceeded the 2016 viral suppression targets set by the US National HIV/AIDS Strategy, transgender women in Ryan White Care lag behind due to a variety of factors—largely social and structural factors involving stigma and discrimination that create barriers to viral suppression for transgender women. Considering the disproportionate impact of HIV on transgender women, HIV cure research must include and respond to the needs of transgender women.

It should be noted that clients receiving Ryan White Care have much better outcomes than the general population of PLWH in the US. In 2014, viral suppression among the general population of people living with HIV in the US was 57.9%. There are no viral suppression data available for transgender women with HIV outside of Ryan White, but we can infer based on these trends that fewer transgender women achieve viral suppression, inside or outside of Ryan White care.

Slide 12:
Before advancing slide to the bubble images, ask the audience what they think of when they hear “HIV cure.” How would they define/describe it? Then advance: This is what other folks think when they hear “HIV cure.”
Source: https://www.positivelyaware.com/articles/what-does-hiv-cure-mean-you

Slide 13:
NIH: https://www.niaid.nih.gov/diseases-conditions/sustained-art-free-hiv-remission
The FDA defines HIV cure research as: “any investigation that evaluates: 1) a therapeutic intervention or approach that controls or eliminates HIV infection to the point that no further medical interventions are needed to maintain health; and 2) preliminary scientific concepts that might ultimately lead to such a therapeutic intervention.”

Slide 14:
This slide shows examples of the main strategies being pursued in HIV cure-related research.
http://treatmentactiongroup.org/cure/trials

Slide 15:
This is a snippet of a table prepared by Treatment Action Group (TAG) that categories HIV cure-related clinical trials based on their approach. These are all trials listed on clinicaltrials.gov.
One noteworthy approach is called “treatment intensification / early treatment.” There are two large trials included in this category that, combined, will be enrolling over 1,500 pregnant women with HIV and treating their newborns who are diagnosed with HIV. The purpose is early treatment with ART to observe the effects of early ART on the HIV reservoir.
Define terms

- **ATI:** Stopping regular HIV treatment to analyze the effect of the HIV cure strategy in question. Typically, therapy is interrupted until study participants reach a pre-determined viral load and/or CD4 count (at which point regular HIV treatment is re-initiated).

- **Leukaphereses** and **aphereses** defined as ‘laboratory procedures where selected immune cells are separated out from the blood and the rest of the blood is returned to the veins.’

- **Autologous transplants** of stem cells defined as ‘studies involving transplantation of your own (“autologous”) stem cells.’

- **Allogeneic transplants** of stem cells defined as ‘studies that involve a transplantation of someone else’s (“allogeneic”) stem cells.’

- **Lymph Node Biopsy:** tissue lymph nodes will be collected, probably from lymph nodes in groin

- **Lumbar puncture aka Spinal Tap:** cerebrospinal fluid (also known as CSF) will be collected from spinal cord by a spinal tap

- **Genital Secretions:** semen will be collected from cisgender men and vaginal cells and fluid will be collected from cisgender women

- **Gut biopsies:** pieces of tissue will be taken from the gut
By congressional act, the NIH requires that women and minority groups are included in all NIH-funded clinical research. It’s not only important to include women in HIV cure research from an epidemiological standpoint or because it’s “the right thing to do”; it’s also the law. But are women being included in HIV cure research? Spoiler alert: by and large, they are not. The reasons for women’s exclusion from HIV cure research are varied and often unclear, but we will look at some of the reasons in this presentation.

Bullet 2: the policy language is written as it appears (“sex/gender and racial/ethnic group”). The WHRC advocates for the use of sex AND gender as well as racial AND ethnic group, since sex and gender are not the same and race and ethnicity are not the same. It’s important to capture all four demographic categories, and we will get to important reasons why later on.

Bullet 3: A recent publication came out called “Low-rate of sex-specific analyses in presentations at the Conference on Retroviruses and Opportunistic Infections (CROI) meeting, 2018: Room to improve.” The study, which was conducted and authored almost exclusively by women (including WHRC members and affiliates), showed that only about half of the oral abstracts in their analysis included the distribution of the study sample by sex, and another 10% mislabeled sex as “gender.” Only about a quarter of these abstracts presented sex-stratified analyses or sex-delineated outcomes. Only 8 of the remaining presentations (12%) provided an explanation for why sex stratification was not presented.
Last bullet: Importantly, most current HIV cure trials are Phase 1 or Phase 2. Of the 128 trials in TAG’s online listing of cure-related trials, 75 (59%) are Phase I and 38 (30%) are Phase II. So it’s significant that the Act’s scope is limited to Phase III and pivotal Phase II and IV studies.

Source: https://grants.nih.gov/grants/funding/women_min/guidelines.htm

Additional resources:
History of women’s inclusion in clinical research: https://orwh.od.nih.gov/toolkit/recruitment/history
ORWH website: https://orwh.od.nih.gov/about
Women in the biomedical workforce: https://extramural-diversity.nih.gov/diversity-matters/women-workforce

Slide 19:
Why is it important to study HIV across sexes? Because HIV is different across sexes, so our prevention, treatment, and cure responses have to differ across sexes.

This slide shows main factors that can cause sex-based differences in HIV. These have been reviewed by Eileen Scully in Current HIV/AIDS Reports (2018). These factors may include:

- Anatomical compartment
- Hormonal differences
- Genetic differences, mainly related to the X chromosome
- Immune-based differences
- Epigenetic landscape
- Differences in establishing latency (cisgender women appear to have smaller HIV reservoir sizes than cisgender men)
- Microbiome factors

There is a strong rationale for studying sex/gender differences in HIV cure-related research.
The Karn quote specifically describes how sex hormones affect HIV cure approaches (in this case, the “shock and kill” approach is implicated).


For more on sex differences, see Gianella, Tsibris, Barr, and Godfrey, “Barriers to a cure for HIV in women” (2016) in JIAS https://www.ncbi.nlm.nih.gov/pubmed/26900031

PrEP: some studies are now suggesting that cis and trans women’s adherence to oral PrEP must be higher than cis men’s adherence in order to be fully protective. Hormonal differences are thought to be one factor affecting this, with one study even suggesting that further research is needed to see if transgender women on hormone therapy may benefit from a higher dose of one of the drugs in oral PrEP than is currently prescribed to all (Cottrell ML et al. Clin Infect Dis 2019 Apr9, “Transgender Women on Tenofovir Have Lower Tenofovir Diphosphate Levels in Rectal Tissue”).

Back to the TAG analysis of the 128 cure-related studies. Clearly we are failing to include women as outlined in the NIH Revitalization Act.

TAG’s analysis found information about participants’ sex for only 44 of the 128 studies.

• 1 study enrolled women exclusively, which should be applauded
• The mean female enrollment in the 25 studies that enrolled male and female participants is 28% (median 11%). When look only at studies that enrolled adults (removing studies that enrolled infants/children who acquired HIV
perinatally), that percentage drops to 16% (range 3%-37%).

- For 18 of the 44 studies, enrollment (or enrollment-to-date) was 100% male.
  - Two studies were limited to male participants but did not say why.
  - The other 16 were not limited to male participants but only enrolled men.
- Given what we know about sex differences in HIV reservoirs, persistence, and disease progression, the field will need to increase female enrollment dramatically in future studies.

We would never allow this if the numbers were reversed and women made up the vast majority of HIV cure participants. This is what we call systemic and institutionalized misogyny.

**Slide 22:**

Here’s another way to think about this. On the bottom of the screen are various HIV cure approaches being studied. The bars show how many women are included in studies of each category. It’s wonderful that there are so many approaches to HIV cure under study, but we’re missing out on how these approaches may or may not benefit women.

So female enrollment is far too low. But there’s another problem here. Who sees the problem? >>

The problem: we’re only seeing “male” and “female.” Where do transgender people fit into HIV cure research? Based on the data provided on these 128 studies, “male” refers to assigned male at birth. Survey respondents did not indicate that gender identity was collected in addition to sex. The two studies that were limited to male participants (as an inclusion criteria) did not provide a rationale for the sex-based exclusion criteria.
Slide 23:

- Protocols referring only to “male” and “female” participants are unclear; does this refer to participants who identify their gender as male/female, or does it refer to participants assigned male/female sex at birth? Protocols should use the terms cisgender and transgender as well as “assigned female/male at birth” to clearly define the study population.
- The two-step method for data collection is crucial for capturing accurate data. The NIH-funded HIV/AIDS clinical trials networks use the two-step method in all studies where they could reasonably expect that asking about gender identity would not put participants in harm’s way. We miss important differences for transgender women if we miscategorize them as cisgender men or women (which are both likely miscategorizations if researchers don’t use the two-step method).

Theoretically, the 43 studies in TAG’s analysis that enrolled participants assigned male at birth could have enrolled transgender women, but we can’t know because gender identity was not also collected. The failure to collect gender identity demonstrates the structural discrimination that makes transgender people invisible in this research.

Slide 24:

It IS possible to include women in HIV cure research! This is the one study in TAG’s analysis with 100% enrollment of women (as an inclusion criterion). This study fits into the “latency-reversing agents” category of HIV cure-related research described earlier. First we need to know if we can reverse latency (or “wake up” the HIV that is “hiding” from the immune system), and this study will help us to know more about reversing latency in cisgender women living with HIV.

Recruitment: The study team devised a number of plans in the event that women weren’t enrolling, but women did enroll with enthusiasm. We applaud the ACTG and this study team and hope to continue seeing more trials focused on the unique biology of women.
There are other trials in early stages of development seeking to specifically address the role of estrogen in the HIV reservoir in transgender women. We hope to see those studies move forward!

More study-specific info:
This is a randomized, open-label, exploratory study assessing the effects of tamoxifen exposure in combination with vorinostat compared to vorinostat alone on viral reactivation among post-menopausal women living with HIV with virologic suppression on ART. There is no analytical treatment interruption in this study.

Slide 25:
Adapted from Rowena Johnston (amfAR)

First theme: meaning that the old-school way of thinking is we’re not going to learn anything from including women in research that we can’t learn from research with men.
Second theme: The underlying old-school way of thinking here is that the male body is “normal” and the female body is “other.” Meaning, women complicate the research because their bodies are different from men’s, leading to complicated answers to research questions. Also, many women can become pregnant, which is another historical reason women have been excluded from research, which has resulted in providers being left clueless on how to treat women and their fetuses/babies in the real world during pregnancy and breastfeeding because research has excluded pregnant and breastfeeding women from clinical trials.

Considering the biological differences we are aware of, there is clear scientific justification and necessity for cis and trans women’s inclusion in cure research.

Slide 26:
There are many barriers between women and HIV cure research participation. We know little about barriers to women’s participation in the context of an ongoing cure
study, but here are some examples from HIV research generally.

Adapted from Sullivan PS et al. J Natl Med Assoc. 2007;99(3);24250.

Slide 27:
Slide credit: Kate Starr on behalf of the WHRC

Slide 28:
Dubé, K and Evans D. 2018 NIH-sponsored Workshop on HIV Cure

When the authors looked at factors that would motivate people living with HIV to participate in HIV in the U.S.: Women seem to be more motivated by having regular access to study nurses, or by financial compensation and receiving support for transportation. Although there were diversity in responses, we should pay attention to how motivators and ‘possible benefits’ are portrayed. The possible motivators appear more relevant for women.

Slide 29:

Recommendations for HIV Cure Research
Slide 30:

Recommendation 1: Take this training through the DAIDS Learning Management System. [https://daidslearningportal.niaid.nih.gov/](https://daidslearningportal.niaid.nih.gov/)

Five training modules were developed by a group of transgender and cisgender subject matter experts. The modules are intended for use by research staff and stakeholders across the NIH-funded HIV/AIDS clinical trials networks, but they can be used by anyone interested in HIV research and transgender communities. As of March 2019, the first two modules are available online; use the link above to create an account with the DAIDS Learning Management System and start the trainings. You can also access the additional resources listed on the slide to conduct in-person trainings and seek additional learning.

In addition to the training, you can access additional resources:

- PowerPoint presentation (for in-person training or just to have the slides for reference)
- Facilitator’s guide (for in-person trainings)
- Exercises and answer keys (for in-person trainings)
- Handout of resources and publications

Train your entire staff!

At the very least, researchers should be collecting data correctly and describing study populations accurately.

Reasons for not using the 2-step method should be explained in protocols since failure to collect both gender ID and sex assigned at birth compromises the accuracy of the data. Do not assume that the term “women” or “MSM” is enough information; include whether you’re talking about cisgender or transgender women/MSM or both.
These recommendations come from a meeting held in Bethesda, MD in January 2018: Regulation of Clinical Research Related to HIV Cure.

NIH Revitalization Act: enlarge its vision to include all phases of research, including animal research.

Relevant strategies: Cure must fit into women’s lives, literally (in terms of biology) and metaphorically (in terms of social/structural factors that make women unique).

Building sex/gender analyses makes it so you have to think about women.

Minimum enrollment: this has been done in other studies. HPTN 083 is a good example where the protocol required that a minimum of 10% transgender women be enrolled. As of May 2019, that study has enrolled 12% transgender women! That’s nearly 500 transgender women in this large HIV prevention study. We can do it in cure research too.

Report results even when 0 women: we need to know when results are and are not generalizable to cis and trans women.

Social science can help with all of this.

Listen to women.
Join the WHRC!

Recent Topics:
- Women and HIV care research
- HIV prevention research for cis and trans women
- Pregnancy and breastfeeding in HIV clinical trials
- Mental health, HIV, and gender
- Screening for intimate partner violence in HIV research
- Barriers to care in research
- Building partnerships with other women-centered organizations

Membership on the WHRC involves participating on bi-monthly conference calls and/or working on the topic/area of your interest with other members (e.g. planning a webinar, authoring an abstract, collaborating as a community partner, assisting with developing the annual work plan). You decide your level of involvement!

For more information, contact Brian Minalga:
bminalga@fredhutch.org

WHRC’s Webinars

See the WHRC’s three-part webinar series on women & HIV care research:
https://actgnetwork.org/

ACTG & IMPAACT

ACTG: AIDS Clinical Trials Group
https://actgnetwork.org/

IMPAACT: International, Maternal, Pediatric, Adolescent AIDS Clinical Trials Network
https://impaaactresearch.org/trials.html

Consider engaging with:
- Community Advisory Boards
- Community Scientific Subcommittees (CSS)
- Women’s HIV inter-network Scientific Committee (WHSIC)

Slide 33:

If you want to get involved, please consider joining us!
Membership on the WHRC involves participating on bi-monthly conference calls and/or working on the topic/area of your interest with other members (e.g. planning a webinar, authoring an abstract, collaborating as a community partner, assisting with developing the annual work plan). You decide your level of involvement!

For more information, contact Brian Minalga:
bminalga@fredhutch.org

Slide 34:

Slide 35:

These are the two research networks primarily funded by the National Institute of Allergy and Infectious Diseases, National Institute of Child Health and Human Development, and National Institute of Mental Health that are leading the HIV cure research agenda.

ACTG: https://actgnetwork.org/
Has a Global Community Advisory Board or GCAB (https://actgnetwork.org/node/223) which helps to integrate community involvement in the research conducted by the network.
Also has a Community Scientific Subcommittee (https://www.actgnetwork.org/node/760), which is part of the GCAB. The CSS strives to ensure that the ACTG scientific priorities reflect the pressing needs of PLHIV and to protect the interests of research participants in ACTG studies.
These 6 centers have also been funded by the NIH to focus on different HIV cure research questions. They each have a CAB.

NIH funded Martin Delaney Collaboratory programs for 2016-2021 (the 6 research teams)

- **defeatHIV, Cell & Gene Therapy for HIV Cure**
  - Fred Hutchinson Cancer Research Center, Seattle, WA
  - CAB: [http://defeathiv.org/2014/05/16/defeathiv-cab-meetings/](http://defeathiv.org/2014/05/16/defeathiv-cab-meetings/)

- **DARE, Delaney AIDS Research Enterprise**
  - UCSF, San Francisco, CA
  - CAB: [https://www.daretocureaids.org/bios](https://www.daretocureaids.org/bios)

- **CARE, Collaboratory of AIDS Researchers for Eradication**
  - UNC, Chapel Hill, NC
  - [https://delaneycare.org/](https://delaneycare.org/)

- **BELIEVE, Bench to Bed Enhanced Lymphocyte Infusions to Engineer Viral Eradication**
  - George Washington University, Washington, DC
  - CAB: [https://believe.weill.cornell.edu/community/about-cab](https://believe.weill.cornell.edu/community/about-cab)

- **I4C, Combined Immunologic Approaches to Cure HIV-1**
  - Beth Israel Deaconess, Boston, MA
  - CAB: [https://www.i4cacure.org/cab/](https://www.i4cacure.org/cab/)

- **BEAT-HIV, Delaney Collaboratory to Cure HIV-1 Infection by Combination Immunotherapy**
  - Wistar Institute, Philadelphia, PA
Slide 37:
The International Workshop on HIV and Women is an opportunity for health care providers, researchers, government, industry, and community to discuss, debate, and further their knowledge on the issues related to HIV and women. The meeting also provides a forum for new investigators to present their work, and to meet personally with experts they view as mentors and inspiration for their work. The meeting considers both local and global issues, and information learned in one setting is often translated to another. The timing now enables participants to combine this meeting with CROI.

Slide 38:
Video is 8:36 long. Recommend showing just a portion of it and referring people to the entire video if they’d like to see the whole thing. The most relevant parts are:
0:00 – 0:55
2:20 – 4:27
https://www.youtube.com/watch?v=jmaaMv1PalA

Slide 39:
amfAR: https://www.amfar.org/cure/
https://www.amfar.org/Cure-Research-Institute/
AmfAR has set a strategy to develop the scientific basis for an HIV cure by the end of 2020. The amfAR consortium and institute support HIV cure research and include news and resources on the topic. They also offer a CAB.

More news resources:
TAG: http://www.treatmentactiongroup.org/cure
POZ: https://www.poz.com/tag/cure
TheBody: https://www.thebody.com/category/curing-hiv
IAS: https://iasociety.org/hivcure
IAS also has a Stakeholders Advisory Group, Industry Collaboration Group, and International Scientific Working Group
PA: https://www.positivelyaware.com/
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