

The Power of Cores: Leading in Access to Careers in STEM

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Department Chair
Merritt College Biosciences
Microscopy, Histotechnician, and
Genomics

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Incoming Histotechnician Program Director
Merritt College Biosciences

Staff Research Associate
Molecular Imaging Center @ UC Berkeley



Western Association of Core Directors Conferences
October 29, 2019

Your Journey to Science?!



Feather's Story - From Showing Up to Not Giving Up

Non-science background, SAHM

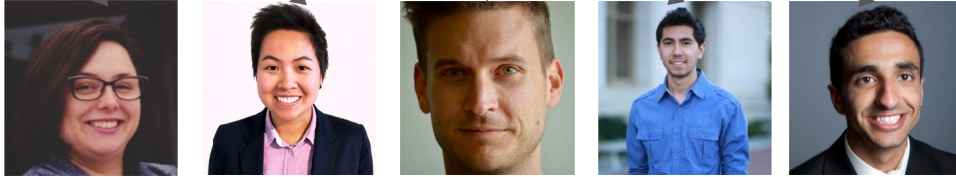
What are histology & microscopy? Joined both programs

Off to Gladstone to work with Meredith Calvert at GHLMC

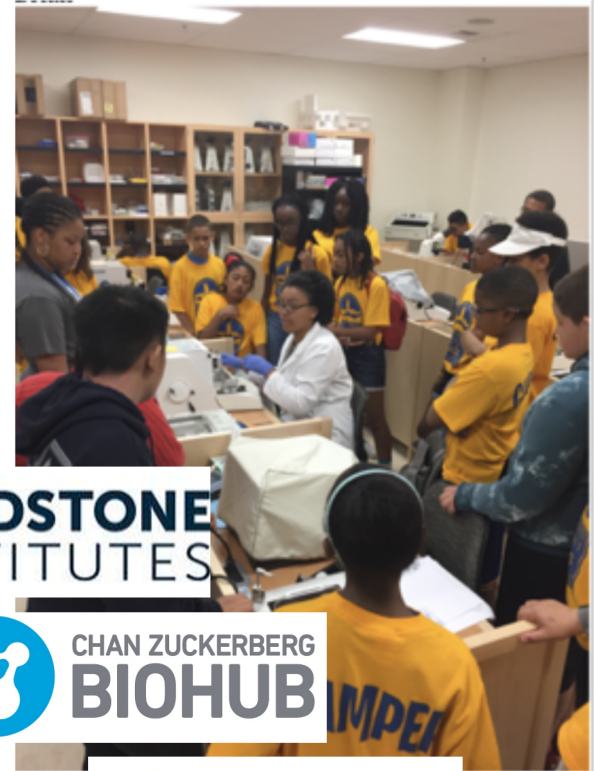
Former MMP student, Giana, emailed Dr. Giorgi and every other CC she knew of...



MACA 6



Paying it forward - Histoscope, jobs, resume prep, MPH career ed -> jobs -> income -> better health outcomes



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INSTITUTES



Publications

nature

Authorship for Organ collection
and processing & Library
preparation and sequencing

Article | Published: 03 October 2018

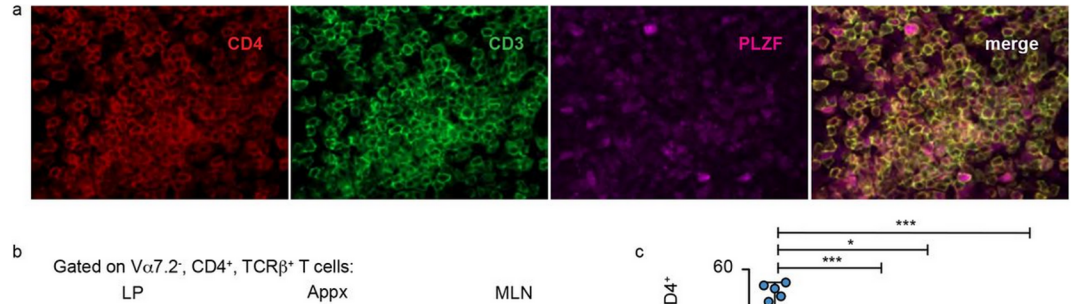
Single-cell transcriptomics of 20 mouse organs creates a *Tabula Muris*

The Tabula Muris Consortium, Overall coordination, Logistical coordination, Organ collection and processing, Library preparation and sequencing, Computational data analysis, Cell type annotation, Writing group, Supplemental text writing group & Principal investigators

Nature 562, 367–372 (2018) | [Download Citation](#) \downarrow

65k Accesses | 91 Citations | 520 Altmetric | [Metrics](#) \gg

Figure 1; Hakias, J. et al.



Merritt College Biosciences Department

83% of Merritt College Students are Black and Latinx

Average age is mid 30s

½ have B.S. degree in Biology

Most are career-changers

3 Programs:

Microscopy, Genomics, Histotechnician

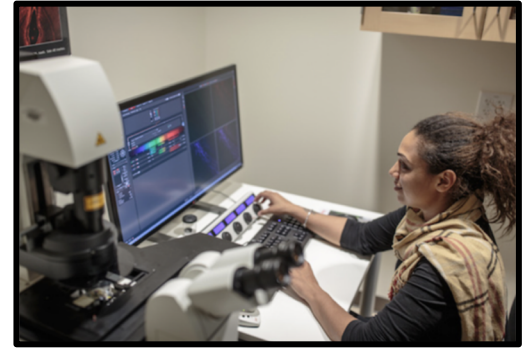
www.merritt.edu/wp/biosciences



Merritt Microscopy Program (MMP)

Certificate in Optical Microscopy (12 units)

- Specimen Prep including tissue culture, IIF
- Extensive hands-on labs with myriad microscopes



Certificate in Fluorescence Bioscience Microscopy (12 units)

- Practicum Research Project
- Confocal microscopy

~ 3 million \$ of microscopes

Jobs: cores, biotech, research labs, sales.



Where Merritt Students & Alumni Work

Merritt College Microscopy & Histotechnology Program grads have gone on to intern or work for...



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Anatomage



What you may not know about Community Colleges

- “Career Education” aka CE programs: we teach current/future skills
- Transfer to 4 year schools
- Looking for “regional” partners
- \$46 per unit in CA
- Class size of 30 students
- Strong on Access, Equity and Inclusion







Fluorescence Microscopy Training for H.S. Biology Teachers



Trainability

When students show up to the program or we are recruiting them...

- We emphasize that we are training them on new equipment and software, but we are also training them on how to be trainable on the job this includes listening, asking questions, admitting when they don't know something
- We train them on how to have confidence in their trainability so when they go to a job or internship they can say they haven't done 100% of what you've listed on your preferred qualifications, but they know 60% and the rest they have confidence they can learn on the job.
- Important because many of our students don't know they can be trained

Examples of Success

Creating Core Pathways

**Holly Aaron, Director, Molecular Imaging Center, UC Berkeley,
Founding member of Merritt Microscopy Program Advisory Board**

Stella Breslin - worked in publishing for 15 years; joined Laney's biomanufacturing program; completed Merritt's microscopy program; interned at the MIC for 8 months; went onto earn her BS from CSUEB; has been at Buck Institute for 6 years and is now a Senior RA.

Harris Ingle - non-science bg; interned at the MIC for several months, interned at Gladstone HLMC for several months, which led to a short time at Zeiss and now he's at the Buck Institute



Partners

Genentech

At Genentech, scientists have access to cutting edge equipment and techniques, and Pathology Core Laboratory facilities and personnel. The Core Laboratories include histology, immunohistochemistry, in situ hybridization, laser capture microdissection, clinical pathology, tissue banking, and advanced light microscopy, including confocal microscopy, electron microscopy, and digital pathology.

Solano Community College - B.S. in Biomanufacturing



SOLANO
COMMUNITY COLLEGE

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Biomanufacturing

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Biomanufacturing Bachelor of Science Degree Program

Program Description

Biomanufacturing means growing living cells (bacterial, yeast, and animal cells) in large tanks and inducing them to produce a protein that can be used in the making of many different products, such as medicines, stem cells, biofuels, biomaterials, and biologically created chemicals. That protein must then be separated from other cellular components, and purified using techniques that exploit its properties to isolate it from other cellular proteins. Technicians then use analytical techniques to prove the purity of the isolated proteins.



ACC NEWSROOM

» ACC Newsroom » ACC awarded \$7.5 million NSF grant to build national biotechnology network

ACC awarded \$7.5 million NSF grant to build national biotechnology network

Submitted by sydney.pruitt on Wed, 10/02/2019 - 12:03pm

New center will expand biotechnology education and encourage research opportunities at 2-year colleges nationwide

The Austin Community College District (ACC) was awarded a \$7.5 million grant from the [National Science Foundation](#) (NSF) to develop a new national biotechnology education center to address the rapidly growing need for highly skilled technicians in biotechnology.

InnovATEBIO Center
High school to CC pipeline
Training the future biotech
workforce

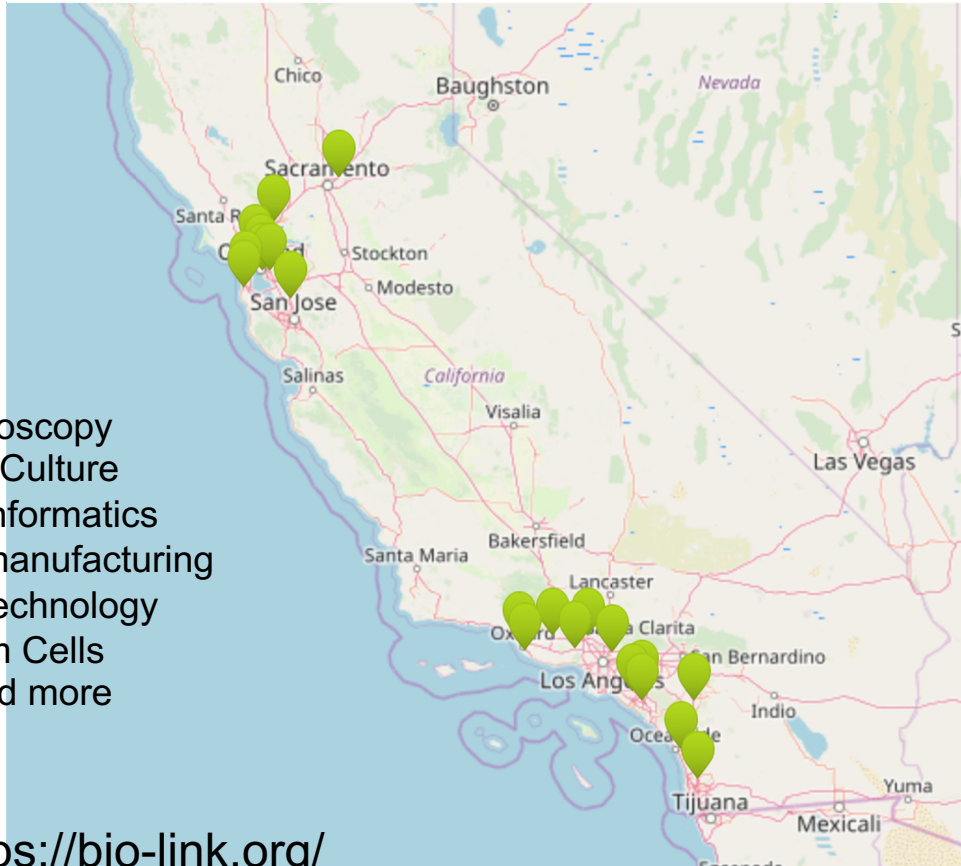
National Partners:

- Finger Lakes CC, New York
- Forsyth Technical CC, Winston-Salem
- Madison College | Madison, WI
- Cold Spring Harbor Laboratory (DNA Learning Center)
- NY City College of Technology
- Digital World Biology | Seattle
- Bay Area Bioscience Center (CSBI Group)
- Bay Area Bioscience Education Community
- Baltimore City Community College
- Washington State University

Where to find your Community College Partners: Bio-Link

Microscopy
Cell Culture
Bioinformatics
Biomanufacturing
Biotechnology
Stem Cells
...and more

<https://bio-link.org/>



Program(s) in California:

American River College
Berkeley City College
City College of SF
Contra Costa College
Irvine Valley College
Laney College
Los Angeles Mission College
Merritt College
MiraCosta College
Miramar College
Moorpark College
Mt. San Jacinto College
Ohlone College
Oxnard College
Pasadena City College
Pierce College
Santa Ana College
Santiago Canyon College
Skyline College
Solano Community College
Ventura College

Call to Action - What you can do

Join an Advisory Board

Speak on industry panels

Externships - train faculty in techniques

Job Shadowing

Internships for students - regular, partnerships with community college

Core Connect



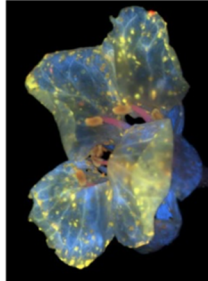
BINA Diversity Working Group

CORE CONNECTION PROJECT

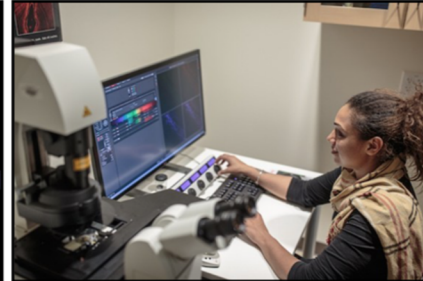
Deploying the power of cores to inspire
and support the careers of new, unique
scientists needed by science



Gisele Giorgi, Ph.D.
Merritt College, Biosciences
Department Director
Chair



Meredith Calvert, Ph.D.
Denali Therapeutics
Executive Committee Liaison



Feather Ives, MPH
Merritt College Histotech
Program Director
Member



INTERNS ARE...

- paid, unpaid, and/or getting class credit
- 2 weeks full-time, one day a week, or 20 hours a week
- 3 months to a year
- looking to be exposed to as much science and scientists as possible!



CORE CONNECTION

- We can help you connect to a source of unique students
- Ask us almost anything....!

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