

# 2020 NHGRI Research Training and Career Development Annual Meeting Report

March 31, 2020

The NHGRI Research Training and Career Development 5<sup>th</sup> Annual Meeting was held virtually on March 31, 2020 and hosted by the Data Analysis and Coordinating Center (DACC) using a Zoom platform (see Agenda, **Appendix A**). This meeting continued to provide a venue for trainees supported by the National Institutes of Health (NIH) National Human Genome Research Institute (NHGRI) in Genomic Sciences, Genomic Medicine, and in Ethical, Legal and Social Implications (ELSI) fields to present their research and to form collaborations with other trainees and established investigators from training programs across the United States.

The meeting had 330 registered Invited Speakers, Program Faculty and Staff, Trainees, Trainee Mentors, and members of NHGRI and NHGRI's Research Training and Advisory Community and the DACC (see Roster, **Appendix B**). Of these, 238 were trainees, including those from the Diversity Action Plan programs (DAP), the T32 training programs, and individual awardees of fellowship or career-development (F or K awards) or Diversity Supplements or Centers of Excellence in ELSI Research (CEER) awards.

## ***OPENING SESSION (Virtual Attendance: 189-235)***

### **Tina Gatlin, NHGRI: "Welcome and Meeting Overview"**

Tina Gatlin welcomed everyone to the 5th Annual NHGRI Research Training and Career Development meeting. She thanked the University of Pennsylvania PIs and staff for their commitment and enthusiasm during the year while planning the meeting and expressed how unfortunate it is that we were not able to be together at Penn. Tina acknowledged that the COVID-19 pandemic has upended many lives in the last few weeks. She shared uplifting quotes including one from Dr. Deborah Birx that "we all have a role to protect one another." Next year's annual meeting will be held at UCLA April 18-20, 2021. Tina thanked Jeanette Papp and Eric Sobel for offering to host again.

Originally, 324 people had registered for the in-person meeting which continues the trend of increasing attendees each year. One positive aspect of moving to a virtual meeting is that people who initially were unable to make the meeting could now participate. Attendees include trainees, training program directors, coordinators and mentors, NHGRI staff, the Data Analysis Coordinating Center (DACC) staff, and members of the Research Training Expert Panel for the Extramural Training Program. Over half of the trainees are part of T32s, with the next largest category being Diversity Action Plan (DAP) registrants. This is the first meeting where individuals on diversity supplements attended. Career Development awardees, Fellowship awardees, and Centers for Excellence in ELSI Research (CEER) trainees were also in attendance.

Tina introduced the NHGRI Training Team Staff. Tina shared that the NHGRI Training team has expanded. Program directors Robb Rowley and Shurjo Sen have joined from the Division of Genomic Medicine and Division of Genomic Sciences, respectively. Luis Cubano is the new Training Team lead. Other NHGRI staff at the meeting include Lisa Chadwick and Chris Gunter who would be giving talks in the professional development session. Carla Easter, Chief of the Education and Community Involvement Branch, is involved in the Trainee Editorial Board. Finally, Bettie Graham will be moderating the lightning talk session. Tina introduced the DACC staff who have worked hard over the last few weeks to move the meeting to a virtual format and would be the hosts for the day. The Research Training Expert Panel has also expanded. Current members are Lisa Parker, Nancy Cox, and Carol Bult. Four new members are: Raphael Irizarry, Wendy Chung, Mimi Blitzer, and Steve Reilly. Raphael Irizarry and Wendy Chung are currently NHGRI Council members. Mimi Blitzer is the CEO of the American Board of Medical Genetics and Genomics. A new position on the panel is a trainee representative. Steve Reilly, a postdoc at the Broad fills this position. Carol Bult will be rotating off this spring. She has been the longest serving member and NHGRI is grateful for her service to the training program. Throughout the years, Carol served NHGRI in many capacities, most recently as a Council member.

## ***Keynote Speakers***

## **Dorothy Roberts and Dr. Sarah Tishkoff, University of Pennsylvania, Philadelphia: “Race and the Use of Polygenic Risk Scores: Scientific & Social Issues”**

Heather Colley introduced the keynote speakers for this year’s meeting. Dr. Sarah Tishkoff is a Professor of Genetics and Biology at the University of Pennsylvania. She is also the director of the new Penn Center for Global Genomics and Health Equity. Her work focuses on phenotypic variation in ethnically diverse Africans. Dr. Dorothy Roberts is a Professor of Law and Sociology and the Raymond Pace and Sadie Tanner Mossell Alexander Professor of Civil Rights at the University of Pennsylvania. Her work focuses on law and public policy, issues in health, social justice, and bioethics especially focusing on women, children, and African Americans. They gave a joint presentation titled: “Race and the Use of Polygenic Risk Scores: Scientific & Societal Issues.”

Dr. Tishkoff’s portion of the talk was titled: “Genomic Diversity in Africa: Implications for Health and Disease.” She gave an overview of the human species origin and diaspora from Africa. She emphasized that most studies have been done with people of European ancestry which creates a challenge in understanding genetic risk factors. Variants that are rare in one population might be common in another. She explained how this has implications for Polygenic Risk Scores as scores are not translatable across populations. Through studying different populations in African in her research, Dr. Tishkoff showed the vast genetic diversity found in African populations. Her research included information about diet and rural vs. urban living, pointing to how environmental factors also have an impact on genetic diversity. Finally, Dr. Tishkoff gave examples of genetic adaptation to diverse environments, highlighting sickle cell disease, variation in the APOL1 locus which can increase risk for kidney disease, and skin color as an adaptive trait.

Dr. Roberts’s portion of the keynote discussed the social implications of using race in research. She gave a brief history of scientists using race as a way to explain inequalities in society. With a biological determinism used to define of concepts like race and intelligence, it took the onus off how society was structured. Anyone who was disadvantaged was so for biological, not social, reasons. Dr. Roberts emphasized that race is not a biological category but rather a political category with biological consequences. It is necessary to recognize race as a product of racism in scientific research too. Humans were not naturally divided into groups but rather the creation of race is a way to justify control of one group over another.

## ***FEATURED SESSION: Professional Development (Virtual Attendance: 225-227)***

### **Lisa Chadwick, NHGRI: “Inside the Black Box of the NIH Funding System”**

Lisa Chadwick, NHGRI Program Director, gave a talk on how the NIH funding system works. She presented a breakdown of how the NIH is organized and defined the roles of program officers, scientific review officers, and grants management specialists. She strongly encouraged everyone to reach out to program officers before submitting a proposal to ask questions and get advice. Lisa also talked about the different types of funding announcements. She detailed differences and similarities in submission dates, Institute participation, review, and funding for each announcement. Finally, she talked about the grant review process. Lisa pointed people to a [YouTube video](#) which is an example of a mock study section. She encouraged potential grantees to think about the audience that will be reading their grant. There are tools that potential grantees can use to figure out where their grant might be reviewed.

### **Chris Gunter, NHGRI: “Doing science is not enough: The importance of communicating your science however you can.”**

Chris Gunter is the Senior Advisor to the NHGRI Director on Genomics Engagement and head of the Engagement Methods Unit in the Social and Behavior Research Branch. She emphasized how important science communication is especially right now with the expanse of information, true or false, regarding COVID-19 that spreads quickly through social media. She pointed to various methods that people can communicate their science from traditional scientific journals to social media. She presented an example of how a traditional paper that was in preprint made its way to social media and then on to a news outlet as a cautionary tale of the importance of effective communication..

Chris highlighted BioRxiv as a way to share and get input on papers before they are published in journals. BioRxiv is the largest pre-print server for science papers. She emphasized how it can be a helpful resource for trainees to point to in biosketches and on job applications when they have papers that are not yet published in a journal.

Regarding social media, Chris strongly recommended everyone check their institution’s social media policy first. Chris discussed Twitter as a platform of science communication. It is used best when there is a large variety of content, goals are followed, and you show personality. She explained how information tends to be passed through opinion leaders who have large networks. Institutions, agencies, journals, and leaders in the field are good accounts to follow. She also recommended checking Twitter analytics to see if communication goals are being met. She pointed out it is important to consider if you want to be on Twitter as it can go wrong. Chris also noted the need to decide if the account will be more professional or personal. Chris encouraged trainees to check out her (@girlscientist) and Lisa Chadwick’s (@meandertail) Twitter accounts.

## ***CLOSING SESSION (Virtual Attendance: 175-180)***

### **Belin Hurlle, NHGRI: “Trainee Opportunities at NIH”**

Belen Hurlle, Intramural Training Program Coordinator, discussed what it is like to train at the NIH in the intramural research program. Trainees can come to the NIH starting in high school as summer students. Most trainees are postdocs with more lab experience so it is a different environment than what might be found in a typical lab that has more graduate level students. NIH is not a degree granting institution but has partnerships with universities so PhD students can spend time training at the NIH. Trainees are welcome to do as many programs as they would like as long as they are eligible. There is a tool online called the [Eligibility Wizard](#) that can help figure out which programs student can apply to. In response to a question about the summer program, Belen stated that the Summer Internship Program has been cancelled for this summer due to the COVID-19 pandemic. Everyone who has been accepted will be invited to join labs next year. She strongly encouraged everyone to reach out to her if they had questions about training at the NIH.

### **Brittany Baur, University of Wisconsin, Madison: “NHGRI Trainee Editorial Board”**

Brittany Baur from the University of Wisconsin, Madison presented on the Genomics: Insights - a venue for graduate and postdoctoral trainees to write and develop science communication skills to non-science audiences. The first pilot articles have been released on the Smithsonian – NHGRI collaboration [Genome Unlocking Life’s Code Website](#). Submissions should be between 500 and 1500 words with a maximum of two figures. The board is also looking for postdocs to serve on the editorial board to review articles and provide feedback to authors. Brittany encouraged anyone who is interested to reach out to her.

### **Luis Cubano, NHGRI: “Closing Remarks”**

Luis Cubano thanked everyone for participating in the annual meeting and he looks forward to meeting everyone in person next year. He expressed how impressed he was by the work of the trainees and wished everyone luck. Luis also thanked the DACC for coordinating the meeting and working and adjusting quickly with the change of circumstances. The poster website and Slack will stay open for a few days for people to continue to meet. An anonymous survey will be distributed by the DACC after the meeting and feedback will be appreciated particularly about the virtual platform. He encouraged everyone to check out the NHGRI website for new training opportunities and to reach out if there are ideas that will improve the NHGRI Training program.

## ***TRAINEE PARTICIPATION***

In addition to the sessions, trainees had the opportunity to orally present their research either as a platform talk or as a lightning talk. Most of the trainees also presented their research during the virtual poster session.

Final number of Abstracts presented at the meeting	149*
Presented as a Platform Talk	14*
Presented as a Lightning Talk	14*
Presented as Poster	121*

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\*64 of the 201 submitted Abstracts presented at the meeting wished to be considered for a platform talk and another 41 Abstracts wished to be considered for a lightning talk.

52 abstracts selected for poster or platform talk or lightning talk were **not** presented because of cancellations due to covid-19.

The program committee was extremely impressed with the quality of the trainees' presentations and the potential impact that their work may have on the future of research in the genomic fields.

**Platform Talks:** A panel of NHGRI staff considered 64 abstracts for oral presentations. Consistent with prior meetings, three platform talk sessions were held and each session contained a broad range of talks representing a major field of research supported by NHGRI: genomic sciences, genomic medicine, and ELSI. The following trainees were chosen to give platform talks. Congratulations to the presenters.

- **Session One** (Moderator: **Joy Boyer**, NHGRI) (**Virtual Attendance: 237**)
  - **Eyal Ben-David**: Whole organism dissection of the genetics of gene expression to the level of tissues and cell-types using single-cell sequencing, *University of California, Los Angeles*
  - **Dayana Tobar**: Inhibiting Secondary Structure in High-Molecular-Weight ssDNA During Translocation Through Graphene Nanopores, *Cal State University Northridge*
  - **Lina Ghaloul-Gonzalez**: Precision Genomic Medicine in The Plain Communities and its Impact on The Plain and General Population, *University of Pittsburgh*
  - **Brian Woodbury**: Direct-to-Consumer Genetic Testing among Alaska Native People: Preliminary Results on Utilization and Impacts, *University of Oklahoma*
  - **Daniel Thiel**: Is the American public optimistic, fearful, or undecided about future uses of gene editing? Evidence from a national survey, *University of Michigan*
- **Session Two** (Moderator **Megal Ramaker**, University of Alabama, Birmingham) (**Virtual Attendance: 222**)
  - **Joseph Yracheta**: Center for Ethical Indigenous Genomic Research (CEIGR): Northern Plains Tribal Deliberation on Data Governance, *University of Oklahoma*
  - **Stephanie Kraft**: What does 'respect for persons' really mean? Insights from diverse genomics research participants, *Seattle Children's Research Institute*
  - **Olivia Dong**: A Formative Evaluation Plan for the Veterans Affairs Pharmacogenomic Testing for Veterans (PHASER) Program, *Duke University*
  - **Emily Blauel**: Rare pathogenic germline variants in sporadic neuroblastoma are nearly universally inherited, *University of Pennsylvania*
- **Session Three** (Moderator: **Ryan Clark**, University of Wisconsin) (**Virtual Attendance: 198**)
  - **Rachel Dalton**: Geographically and socioeconomically disadvantaged patients use a higher proportion of drugs with potentially actionable pharmacogenetic interactions, *University of Florida*
  - **Eddie Ramirez**: Massively parallel assay for amino acid significance in activation domain activity, *Washington University in St. Louis*
  - **Aidan Manning**: Tissue-Specific Expression of tRNAs and tRNA-derived Small RNAs, *University of California, Santa Cruz*
  - **Yekaterina Shulgina**: A computational screen for nuclear alternative genetic codes in all sequenced organisms, *Harvard University*

- **Jesse Engreitz**: Genome-wide maps of enhancer-gene connections link immune disease risk variants to target genes, *Broad Institute*
- **Lightning Talks** (Moderator: **Betty Graham**, NHGRI) (Virtual Attendance: 208)  
A panel of NHGRI staff considered 41 abstracts for lightning talk presentations. This session allowed for brief 3-minute presentations in each major field of research supported by NHGRI: genomic sciences, genomic medicine, and ELSI. The following trainees were chosen to give lightning talks. Congratulations to the presenters.
  - **Alexis Walker**: Ethics and -Omics: Startup Employees' Perspectives on Social Issues in Genomics, *Johns Hopkins University*
  - **Alexandra Acuna**: NFATc1 As a Novel Atrial Fibrillation Susceptibility Gene, *The University of Utah*
  - **Julius Judd**: Precisely mapping transcription of transposable elements using PROxI, *Cornell University*
  - **Dee Robinson**: Natural Variation in the Fitness Consequences of Gene Overexpression in Wild *Saccharomyces cerevisiae* Isolates, *University of Wisconsin, Madison*
  - **Samuel Rubinstein**: A descriptive and network analysis of the mutational landscape of DLBCL in the GENIE database, *Vanderbilt University*
  - **Robin Rounthwaite**: Making Genome Graphs More Concise: Normalizing Genetic Variation using Multiple Sequence Alignment, *University of California, Santa Cruz*
  - **Rachel Ungar**: Analysis of RNA-seq and ATAC-seq Data Recapitulates Population Structure in Six African Populations, *Stanford University*
  - **Prakriti Paul**: In the Age of Cellular Reprogramming: Creating Synthetic Cell Types through Targeted Transcription Factor Expression, *Princeton University*
  - **Gabriel Hassler**: Fast phylogenetic trait inference with missing data, *University of California, Los Angeles*
  - **Amanda Stanhaus**: Perspectives of Cancer Patients When Considering Opting Out of Commercial Retention of Genetic Data, *University of Michigan*
  - **Mohammad Siddiq**: Effects of mutational chance and epistasis in evolution of gene expression, *University of Michigan*
  - **Jason Miller**: Finding order in disorder: quantifying genetic variability associated with protein features, *University of Pennsylvania*
  - **Jacob Tome**: Context-rich massively parallel reporter assays reveal combinatorial logic of enhancer-promoter interactions, *University of Washington, Seattle*
  - **Ryan Chung**: Representation Learning for Variant Interpretation, *University of California, Berkeley*

**Posters:** The poster presentations provided an opportunity for trainees to present their research and answer questions from their peers and other scientists. This year's session included posters in genomic sciences (101 posters), genomic medicine (16 posters) and ELSI (4 posters). The posters were uploaded online with the abstracts on the meeting website, and the poster session was presented virtually using the Slack platform. Attendees were given instructions for viewing posters ahead of time on the meeting website, and talking with the poster presenters on the Slack platform.

## 2020 NHGRI Research Training and Career Development Virtual Annual Meeting

March 31, 2020 <https://wustl.zoom.us/j/734621381>

Tuesday, March 31, 2020

Moderator: Tina Gatlin

10:30 – 10:40 am  
(All Times Eastern)

**Welcome and Meeting Overview**  
Tina Gatlin, NHGRI

10:40 – 11:30 am

**Keynote Speaker Introduction:** Heather Colley, NHGRI

**Keynote Address:** Race and the Use of Polygenic Risk Scores: Scientific & Social Issues  
Dorothy Roberts and Sarah Tishkoff, University of Pennsylvania

11:30 – 12:20 pm

**Trainee Scientific Talks – Session 1**  
Session Moderator: Joy Boyer, NHGRI

**Eyal Ben-David:** Whole organism dissection of the genetics of gene expression to the level of tissues and cell-types using single-cell sequencing, University of California, Los Angeles

**Dayana Tobar:** Inhibiting Secondary Structure in High-Molecular-Weight ssDNA During Translocation Through Graphene Nanopores, Cal State University Northridge

**Lina Ghaloul-Gonzalez:** Precision Genomic Medicine in The Plain Communities and its Impact on The Plain and General Population, University of Pittsburgh

**Brian Woodbury:** Direct-to-Consumer Genetic Testing among Alaska Native People: Preliminary Results on Utilization and Impacts, University of Oklahoma

**Daniel Thiel:** Is the American public optimistic, fearful, or undecided about future uses of gene editing?: Evidence from a national survey, University of Michigan

12:20 – 12:30 pm

Break

12:30 – 1:10 pm

**Trainee Scientific Talks – Session 2**  
Session Moderator: Megan Brietbach, University Alabama, Birmingham

**Joseph Yracheta:** Center for Ethical Indigenous Genomic Research (CEIGR): Northern Plains Tribal Deliberation on Data Governance, University of Oklahoma

**Stephanie Kraft:** What does 'respect for persons' really mean? Insights from diverse genomics research participants, Seattle Children's Research Institute

**Olivia Dong:** A Formative Evaluation Plan for the Veterans Affairs Pharmacogenomic Testing for Veterans (PHASER) Program, Duke University

**Emily Blauel:** Rare pathogenic germline variants in sporadic neuroblastoma are nearly universally inherited, University of Pennsylvania

1:10 – 2:25 pm

**Professional Development**

Inside the black box of the NIH funding system

**Speaker:** [Lisa Chadwick](#), *NHGRI*

Doing science is not enough: The importance of communicating your science however you can

**Speaker:** [Chris Gunter](#), *NHGRI*

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## 2020 NHGRI Research Training and Career Development Virtual Annual Meeting Agenda (Continued)

2:25 – 3:25 pm

Lunch Break and Poster Session

### Virtual Poster Session on Slack:

Instructions for viewing posters and navigating Slack

We are utilizing a catalog style page for navigating, searching, comparing and contacting the presenters.

- Go to <https://biostat.wustl.edu/dacc2/conference-home/2020-presentations/>  
(note site is a work in progress and will not be fully functional until ppt presentations are submitted)
- Search for specific keywords in the title or description by using the left site text field poster search.
- Click on the green ribbon compare to see any two posters side by side
- Click on the name of the poster or Details bottom to see the description of the project.
- **Click on the “Chat with the presenter” link to direct message the presenter**
- Click on the “Enter the presenter’s channel” to request access to the private channel for this poster

### Slack for attending poster session:

You must have a Slack account before you [can link to direct messenger and chat with the presenter](#).

**Set up Slack account for those who do not have an account:** <https://slack.com/get-started#/>

Click on “My team is on Slack” and enter your email

Open your email to confirm your email account

This will take you back to Slack

Click on the link to Launch our meeting space (2020 NHGRI Annual Training Meeting (Virtual))

**Slack for attending poster session if you already have an account:**

[https://join.slack.com/t/2020nhgriannu-bxq3361/shared\\_invite/zt-csvs4kyc-xqBRggxjZwPxs7kHd1uu2Q](https://join.slack.com/t/2020nhgriannu-bxq3361/shared_invite/zt-csvs4kyc-xqBRggxjZwPxs7kHd1uu2Q)

**Questions: Please contact [PDatsov@wustl.edu](mailto:PDatsov@wustl.edu)**

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## 2020 NHGRI Research Training and Career Development Virtual Annual Meeting Agenda (Continued)

Moderator: Heather Colley

3:25 – 4:35 pm

### Trainee Lightning Talks – Session 3 Session Moderator: [Bettie Graham](#), NHGRI

[Alexis Walker](#): Ethics and -Omics: Startup Employees' Perspectives on Social Issues in Genomics,  
*Johns Hopkins University*

[Alexandra Acuna](#): NFATc1 As a Novel Atrial Fibrillation Susceptibility Gene,  
*The University of Utah*

[Julius Judd](#): Precisely mapping transcription of transposable elements using PROxI,  
*Cornell University*

[Dee Robinson](#): Natural Variation in the Fitness Consequences of Gene Overexpression in Wild  
*Saccharomyces cerevisiae* Isolates, *University of Wisconsin, Madison*

[Samuel Rubinstein](#): A descriptive and network analysis of the mutational landscape of DLBCL in the  
GENIE database, *Vanderbilt University*

[Robin Rounthwaite](#): Making Genome Graphs More Concise: Normalizing Genetic Variation using  
Multiple Sequence Alignment, *University of California, Santa Cruz*

[Rachel Ungar](#): Analysis of RNA-seq and ATAC-seq Data Recapitulates Population Structure in Six African  
Populations, *Stanford University*

[Prakriti Paul](#): In the Age of Cellular Reprogramming: Creating Synthetic Cell Types through Targeted  
Transcription Factor Expression, *Princeton University*

[Gabriel Hassler](#): Fast phylogenetic trait inference with missing data,  
*University of California, Los Angeles*

[Amanda Stanhaus](#): Perspectives of Cancer Patients When Considering Opting Out of Commercial  
Retention of Genetic Data, *University of Michigan*

[Mohammad Siddiq](#): Effects of mutational chance and epistasis in evolution of gene expression,  
*University of Michigan*

[Jason Miller](#): Finding order in disorder: quantifying genetic variability associated with protein  
features, *University of Pennsylvania*

[Jacob Tome](#): Context-rich massively parallel reporter assays reveal combinatorial logic of enhancer-  
promoter interactions, *University of Washington, Seattle*

[Ryan Chung](#): Representation Learning for Variant Interpretation,  
*University of California, Berkeley*

## 2020 NHGRI Research Training and Career Development Virtual Annual Meeting Agenda (Continued)

4:35 – 4:45 pm

Break

4:45 – 5:35 pm

**Trainee Scientific Talks – Session 4**  
Moderator: [Ryan Clark](#), *University of Wisconsin*

**Rachel Dalton:** Geographically and socioeconomically disadvantaged patients use a higher proportion of drugs with potentially actionable pharmacogenetic interactions,  
*University of Florida*

**Eddie Ramirez:** Massively parallel assay for amino acid significance in activation domain activity, *Washington University in St. Louis*

**Aidan Manning:** Tissue-Specific Expression of tRNAs and tRNA-derived Small RNAs,  
*University of California, Santa Cruz*

**Yekaterina Shulgina:** A computational screen for nuclear alternative genetic codes in all sequenced organisms, *Harvard University*

**Jesse Engreitz:** Genome-wide maps of enhancer-gene connections link immune disease risk variants to target genes, *Broad Institute*

5:35 – 5:50 pm

**Training Opportunities at NIH**  
[Belen Hurler](#), *NHGRI*

5:50 – 5:55 pm

**NHGRI Trainee Editorial Board**  
[Brittany Baur](#), *University of Wisconsin, Madison*

5:55 – 6:00 pm

**Closing Remarks**  
[Luis Cubano](#), *NHGRI*

6:00 pm

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### Email Contacts

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DACC	<b>Data Analysis and Coordinating Center</b> <a href="mailto:BIOSTAT-DACC@email.wustl.edu">BIOSTAT-DACC@email.wustl.edu</a>	Trevia Rice Petar Datsov Tessa Gauzy Linda Schreier	<a href="mailto:trevia@wustl.edu">trevia@wustl.edu</a> <a href="mailto:pdatsov@wustl.edu">pdatsov@wustl.edu</a> <a href="mailto:tmgauzy@wustl.edu">tmgauzy@wustl.edu</a> <a href="mailto:schreierl@wustl.edu">schreierl@wustl.edu</a>

**Appendix B: 2020 Annual Meeting Registration**

<b>First Name</b>	<b>Last Name</b>	<b>Program Name</b>
Jazmine	Abril	Utah (GS)
Hasan	Abu-Amara	U Michigan
Alexandra	Acuna	Utah (GS)
Adetunji	Adeniran-Adetoye	Utah (GS)
Josh	Akey	PU
Megan	Allyse	Missing
Bailee	Alonzo	Utah (GS)
McAlister	Andrea	Baylor College of Medicine
Aubrey	Annis	U Michigan
Carlos	Arevalo	Missing
Monica	Arniella	Broad
Kaul	Arya	Harvard
Rachael	Aubin	Upenn (GS)
Ben	Auerbach	Upenn (GS)
Elias	Awad	University of Alabama at Birmingham
Yossef	Baidi	Broad
Matthew	Bailey	Utah (GM)
Dustin	Baldrige	Missing
James	Banks	Utah (GS)
Gregory	Barsh	University of Alabama at Birmingham
Becerra	Basheer	Harvard
Andrew	Bass	PU
Rachel	Baum	UCB
Brittany	Baur	University of Wisconsin (GS)
Julie	Beans	The University of Oklahoma (ELSI)
<b>First Name</b>	<b>Last Name</b>	<b>Program Name</b>
Eyal	Ben-David	UCLA
Alyssa	Benjamin	Stanford
Semira	Beraki	Missing
Abby	Bergmann	Stanford
Bruce	Birren	Broad
Jessica	Blanchard	The University of Oklahoma (ELSI)
Emily	Blauel	Upenn (GM)
Freida	Blostein	U Michigan
Mike	Boehnke	U Michigan
Craig	Bohrson	Harvard
Luca	Bonomi	Missing
Joy	Boyer	NHGRI
Megan	Breitbach	University of Alabama at Birmingham
Michael	Brent	WUSTL
Stefanie	Brizuela	Missing
Larry	Brody	NHGRI
David	Brookes	UCB

Angela	Brooks	Missing
Jaden	Brooks	Utah (ELSI)
Imani	Brown	R25; University of Alabama at Birmingham
Maja	Bucan	Upenn (GS)
Carol	Bult	Jackson Laboratories
Kathryn	Burch	UCLA
David	Burke	U Michigan
Emily	Butka	WUSTL
Eileen	Cahill	NHGRI
Kyle	Campbell	U Michigan
Tiffany	Campbell	Utah (ELSI)
Karla	Campos	University of Florida
Lisa	Chadwick	NHGRI
Hannah	Chervitz	Upenn (GM)
David	Chiang	Other
Uthsav	Chitra	PU
Alec	Chiu	UCLA
Samuel	Cho	PU
Benjamin	Chu	UCLA
Ryan	Chung	UCB
Ann	Cirincione	PU
Ryan	Clark	University of Wisconsin (GS)
Barak	Cohen	WUSTL
<b>First Name</b>	<b>Last Name</b>	<b>Program Name</b>
Cameron	Cole	R25; University of Alabama at Birmingham
Heather	Colley	NHGRI
Nancy	Cox	Vanderbilt University
Luis	Cubano	NHGRI
Rachel	Dalton	University of Florida
Petar	Datsov	DACC
Brittney	Davis	University of Alabama at Birmingham
Janie	DeFriez	Utah (ELSI)
Sam	Degregori	UCLA
Tina	Del	UCLA
Zel	Demere	Broad
David	Denberg	PU
Celeste	Diaz	Broad
Juan	Diaz-Rodriguez	University of Wisconsin (GS)
Kara	Dolinski	PU
Alicia	Dominguez	U Michigan
Guanlan	Dong	Harvard University
Olivia	Dong	Missing
Yao	Douglas	Harvard
Heather	Dron	Stanford University ELSI
Alan	Du	WUSTL

Connor	Duffy	Stanford
Susan	Dutcher	Washington University in St. Louis
carla	easter	NHGRI
Amanda	Elsy	University of Florida
Jesse	Engreitz	Missing
Maricruz	Espinoza	Baylor College of Medicine
Robert	Farr	Stanford
Carole	Federico	Stanford University ELSI
Kailey	Ferger	UCB
Elvelyn	Fernandez	Utah (GS)
Katherine	Flannery	Harvard
Micah	Fletcher	PU
Maria	Flores	Jackson Laboratories
Paola	Fonseca-Romero	Utah (GS)
Juliet	Forman	Broad
Philip	Freda	Upenn (GM)
Trenton	Frisbie	U Michigan
Isabel	Gabel	University of Pennsylvania (ELSI)
Tina	Gatlin	NHGRI
<b>First Name</b>	<b>Last Name</b>	<b>Program Name</b>
Tessa	Gauzy	DACC
Adam	Gayoso	UCB
Steven	Gazal	Harvard
Rebecca	Gellman	Stanford
Maximilian	Genetti	University of California, Santa Cruz
Jamya	Geter	R25; University of Alabama at Birmingham
Ariel	Gewirtz	PU
Lina	Ghaloul Gonzalez	Missing
Richard	Gibbs	Missing
Geoffrey	Ginsburg	Missing
Katrina	Goddard	Kaiser Permanente Northwest Center for Health Research
Page	Goddard	Stanford
Joseph	Gonzalez	Stanford
Gracie	Gordon	Missing
BETTIE	GRAHAM	NHGRI Program Director
Ardawna	Green	Baylor College of Medicine
Richard	Green	University of California, Santa Cruz
Emily	Greenwald	Stanford
Brunette	Gregory	Harvard
Angelina	Guerra	Jackson Laboratories
Francis Xavi	Guitart	UW (GS)
Chris	Gunter	NHGRI
Anika	Gupta	Harvard
Betty	Ha	Stanford
Susanne	Haga	Missing

William	Hankey	Missing
Zephaun	Harvey	NHGRI
Catherine	Haskell	Harvard
Gabriel	Hassler	UCLA
Michael	Hayes	Stanford
Yixuan	He	Harvard
Katherine	Hendy	University of Michigan (ELSI)
Brian	Ho	Stanford
Vanessa	Howland	Missing
Angela	Huang	Upenn (GS)
Kimberly	Huggler	University of Wisconsin (GS)
Ranad	Humeidi	Broad
Belen	Hurle	NHGRI
Nilah	Ioannidis	Missing
Zia	Isola	Missing
<b>First Name</b>	<b>Last Name</b>	<b>Program Name</b>
Elizabeth	Jasper	Vanderbilt University
Steven	Joffe	University of Pennsylvania (ELSI)
Julie	Johnson	University of Florida
Keith	Jones	Other
Lynn	Jorde	Utah (GM)
Jonathan	Judd	Jackson Laboratories
Julius	Judd	Missing
Stephanie	Kabeche	Stanford
Ashley	Kapron	Utah (GM)
Daniel	Kassler	Harvard
Duchinski	Katherine	Harvard
Moriah	Katt	University of Wisconsin (GS)
Alex	Kern	Stanford
Pouya	Khanhkanian	Upenn (GM)
Alex	Khodaverdian	UCB
Madison	Kilbride	University of Pennsylvania (ELSI)
Ellen	Kim	University of Michigan (ELSI)
Juhyun	Kim	UCLA
Junhyong	Kim	Upenn (GS)
Obadiah	Kirk	Utah (GS)
Maureen	Kirsch	Upenn (GS)
Jason	Klein	University of Washington
Hillary	Koch	Missing
Ben	Kompa	Harvard
Bruce	Korf	University of Alabama at Birmingham
Stephanie	Kraft	Seattle Children's Research Institute
April	Kriebel	U Michigan
Kiran	Kumar	Broad
Madeline	Kwicklis	U Michigan

Moira	Kyweluk	University of Pennsylvania (ELSI)
Chris	Large	UW (GS)
Meiyee	Law	Jackson Laboratories
Kendra	Lawrence	Missing
Matthew	Lebowitz	Missing
Daniel	Lee	Harvard
David	Lee	Upenn (GS)
Maya	Lemmon-Kishi	UCB
Kevin	Liao	U Michigan
Cindy	Lin	Stanford
Andrew	Liu	Harvard
<b>First Name</b>	<b>Last Name</b>	<b>Program Name</b>
Nicole	Lockhart	NHGRI
Kai	Loell	WUSTL
Matthew	Lollar	University of Wisconsin (GS)
Nicholas	Lorig-Roach	University of California, Santa Cruz
Peter	Louis	Vanderbilt University
Justin	Lund	The University of Oklahoma (ELSI)
Andrew	Lynch	University of Wisconsin (GS)
Rosa	Ma	Stanford
Juan	Macias	WUSTL
Jasmine	Mack	U Michigan
Breanna	Maclin	R25; University of Alabama at Birmingham
Varun	Mandi	The University of Pennsylvania
Benjamin	Mann	Utah (ELSI)
Aidan	Manning	University of California, Santa Cruz
Teri	Manolio	NHGRI
Rebecca	Martin	UW (GS)
Debra	Mathews	Missing
Lucas	Matthews	CEER
Jakob	McBroome	University of California, Santa Cruz
Matthew	McCoy	Stanford
Allyse	Megan	Mayo Clinic
Robin	Meyers	Stanford
Daniel	Michael	University of Alabama at Birmingham
Li	Michelle	Harvard
Shai	Miguel	Utah (GS)
Gwen	Miller	Broad
Jason	Miller	Upenn (GM)
Robert	Millikin	University of Wisconsin (GS)
Hafsa	Mire	Broad
Cailey	Mitchell	Jackson Laboratories
Kathleen	Mittendorf	Kaiser Permanente Northwest Center for Health Research
Marie	Mooney	Missing
Jason	Moore	Upenn (GM)

Sonia	Moreno	Broad
Michael ("Brodie")	Mumphrey	U Michigan
Sedona	Murphy	Stanford
Debra	Murray	Baylor College of Medicine
Antonio	Muscarella	PU
Katherine	Nathanson	Upenn (GM)
Shakila	Nawaz	Utah (ELSI)
<b>First Name</b>	<b>Last Name</b>	<b>Program Name</b>
Began	Nguy	Missing
David	Nicholson	Upenn (GS)
Hunter	Nisonoff	UCB
Jeffrey ("Jeff")	Okamoto	U Michigan
Jonas	Oppenheimer	University of California, Santa Cruz
Krystle	Osby	University of Utah
Kellie	Owens	University of Pennsylvania (ELSI)
Louise	Pape	University of Wisconsin (GS)
Jeanette	Papp	UCLA
Joseph	Park	Missing
Peter	Park	Harvard
Lisa	Parker	NHGRI RTAC
Roshni	Patel	Stanford
Prakriti	Paul	PU
Thomas	Pearson	University of Florida
Trenton	Peters-Clarke	University of Wisconsin (GS)
Josh	Peterson	Missing
Eric	Pruitt	University of Florida
Hugh	Purdy	University of Wisconsin (GS)
Jingya	Qiu	Upenn (GS)
Vasiliki	Rahimzadeh	Stanford University ELSI
Eddie	Ramirez	Washington University in St. Louis
Paul	Ranum	Upenn (GM)
Alex	Raphael	NHGRI
Matthew	Ravalin	Stanford
Taylor	Real	Missing
Anna	Redgrave	U Michigan
Heidi	Rehm	Other
Steven	Reilly	Missing
Jessica	Rhodes	Stanford
Treva	Rice	DACC
Chen	Richard	Harvard
Scott	Roberts	University of Michigan (ELSI)
DeElegant	Robinson	University of Wisconsin (GS)
Foxy	Robinson	Broad
Anthony	Rodriguez-Vargas	UCB
Robin	Rounthwaite	University of California, Santa Cruz

Samuel	Rubinstein	Vanderbilt University
Laurie	Rumker	Harvard
Jayoung	Ryu	Harvard University
<b>First Name</b>	<b>Last Name</b>	<b>Program Name</b>
Azita	Sadeghpour	Missing
Helen	Sakharova	UCB
Pamela	Sankar	University of Pennsylvania (ELSI)
Alina	Schmidt	WUSTL
Linda	Schreier	DACC
Bryce	Schuler	University of Pennsylvania (GM)
David	Schwartz	Missing
Shurjo	Sen	NHGRI
Melody	Shi	Missing
Nieves-Rodriguez	Shirley	UCLA
Yekaterina	Shulgina	Missing
Mohammad ("Mo")	Siddiq	U Michigan
Arend	Sidow	Stanford
Brandon	Sie	Harvard University
Danny	Simpson	PU
Ben	Siranosian	Stanford
Gloria	Slattum	Utah (GS)
Jordan	Smoller	Other
Michael	Snyder	Stanford
Michael	Snyder	Missing
Eric	Sobel	UCLA
John	Soldner	University of Alabama at Birmingham
Hayden	Speck	UCLA
Jeff	Spence	Stanford
Amy	Spens	UW (GS)
Paul	Spicer	The University of Oklahoma (ELSI)
Amanda	Stanhaus	University of Michigan (ELSI)
Annamarie	Steed	Missing
Cody	Steely	Utah (GM)
John	Storey	PU
Jordan	Swanier	Utah (GS)
Willie	Swanson	UW (GS)
Kieran	Sweeney	University of Wisconsin (GS)
James	Tabery	Utah (ELSI)
Dana	Talsness	Utah (GM)
Alison	Tang	Missing
Liana	Tellez	Broad
Daniel	Thiel	University of Michigan (ELSI)
Neil	Thomas	UCB
Bryan	Thornlow	Missing
<b>First Name</b>	<b>Last Name</b>	<b>Program Name</b>

Susanne	Tilk	Stanford
Dayana	Tobar	CSUN
Jacob	Tome	UW (GS)
Boltz	Toni	UCLA
Rachel	Ungar	Stanford
Gisselle	Velez-Ruiz	Broad
Alexis	Walker	Missing
Amelia	Wallace	Utah (GM)
Janey	Wang	Vanderbilt University
Megan	Washington	Baylor College of Medicine
Jessica	Watts	Baylor College of Medicine
Alexandra	Weber	Missing
Kathryn	Weinand	Harvard
Peggy	White	U Michigan
Michael	Wilkinson	WUSTL
Eamon	Winden	University of Wisconsin (GS)
Brian	Woodbury	The University of Oklahoma (ELSI)
Tim	Woods	Broad
Yeng	Yang	Utah (GS)
H. Joseph	Yost	Utah (GS)
Jennifer	Young	Stanford University ELSI
Joseph	Yracheta	CEER
Wei	Zhou	Other