2019 NHGRI Research Training and Career Development Annual Meeting Report

The NHGRI Research Training and Career Development 4th Annual Meeting was held on April 7-9, 2019 at the Chase Park Plaza Royal Sonesta Hotel in St. Louis, MO. This meeting continues 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 286 registered Invited Speakers, Program Faculty & Staff, Trainees, Trainee Mentors, and members of NHGRI and NHGRI's Research Training and Advisory Committee and the DACC (see Roster, *Appendix A*). Of these, 200 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 Centers of Excellence in ELSI Research (CEER) awards.

OPENING SESSIONS

- **Welcome and Introduction:** Joy Boyer, program director in the Division of Genomics and Society, indicated that the number of annual meeting attendees has grown since the meeting's inception and this year's meeting in St. Louis was the largest meeting yet. Meeting attendees included the following groups of people: T32 graduate students and postdoctoral fellows (PhD, MD, and MD/PhD), individual fellowship (F) and career development (K) awardees (K99/R00; K01 and K08), Diversity Action Plan (DAP) undergraduate and post-baccalaureate trainees, Training Program Directors and Coordinators, Research Training Advisory Committee members, NHGRI's Data Analysis and Coordinating Center (DACC) members, and members of NHGRI including the NHGRI Training Team and the NHGRI Director. Joy encouraged everyone to participate fully in the meeting and take advantage of the opportunities to network with peers and faculty. She then introduced Dr. Eric Green, the NHGRI Director, who would begin hosting the session related to NHGRI's 2020 Strategic Plan.

- **The Keynote Presentation:** The keynote presentation, "Enhancing Ethical Genomic Research with Indigenous Communities," was given by Keolu Fox, PhD, from the University of California, San Diego. Dr. Fox, a former NHGRI intramural trainee, is a human geneticist currently doing his postdoctoral research focusing on variation and disease in underrepresented populations. He reviewed a brief history of the field of population genetics including lessons learned from scientists where indigenous populations were not partners. Dr. Fox discussed genomics in the present where 88% of GWAS studies are samples of European Ancestry. He also stressed moving away from correlation-based studies to data-based studies as illustrated by findings related to the Thrifty Gene. It was once hypothesized that this gene was at one point advantageous but with modern lifestyles, it predisposes populations carrying the gene to metabolic disorders. Correlation-based studies indicated that the gene was related to a scarcity of calories during the diaspora of Polynesian ancestors. However, Dr. Fox emphasized the story told should be one based on known data and data-based mechanisms. Finally, Dr. Fox encouraged future genomics research to be engaging with communities as partners. He stressed that researchers should not be monetizing indigenous variation and instead that the evolving landscape should benefit indigenous people included in intellectual property claims. His own research is guided by principles of valuing diverse data sets, reanalyzing existing data sets in a different way, and functional investigations of variation with a move past correlation and on to causation.

FEATURED PANEL SESSIONS

- **NHGRI's Strategic Planning Session:** NHGRI's Director Eric Green opened the session with a presentation explaining NHGRI's history of strategic planning. As the Human Genome Project (HGP) completed, the institute had accomplished the reason for its existence so the question remained, "what was next for the institute?" A new strategic plan was announced the final day of the HGP in 2003 and was updated in 2011. In February of 2018, NHGRI kicked off the start of another strategic plan. NHGRI will be

publishing the next strategic plan in fall of 2020, 30 years after the HGP launched. At town halls, sessions at major meetings and consortiums, NHGRI has heard from many different groups of stakeholders. Dr. Green stressed that being able to hear from the trainees at this meeting is especially important as their feedback will benefit the science of future trainees. NHGRI is a small institute whose genomic research enables the science of many other diseases, many of which have a dedicated institute. Dr. Green stated that NHGRI's goal is to be the leading edge of all human genomics research at the NIH and that this goal defines their strategic planning process. The session continued with presentation from other members of NHGRI including Heather Colley, Dave Kaufman, Tina Gatlin, and Carolyn Hutter. They gave trainees and other meeting attendees the opportunity to provide feedback on top themes in five areas of interest to the strategic plan: Genomics of Medicine, Genomics of Disease, Data Science, Society, Education, & Engagement, and Genomics & Technology. Trainees responded they thought was most important or missing from the themes. In the last part of the session, Heather presented open-ended responses that trainees gave in a survey distributed to all trainees before the meeting. More information on NHGRI's 2020 Strategic Planning can be found here: https://www.genome.gov/27570607/strategic-planning-overview/

- **Mock Grant Review:** Drs. Rudy Pozzatti (NHGRI) and Ira Hall (Washington University in St. Louis) gave trainees a look into the NHGRI grant review process by moderating a mock grant review. Dr. Pozzatti served as the Scientific Review Officer and Dr. Hall served as the Review Chair. To start the session, Dr. Pozzatti first briefly reviewed the grants process (e.g., Scientific Review Officers read each grant application and then recruit a chair and panel members to review and score grants for their scientific and technical merit). The mock review panel was comprised of eight trainee volunteers, four trainees were assigned to review one of two grant applications (one R01 and one K) selected for the mock grant review. These two grants were submitted to NHGRI for funding consideration and the grant's abstract and specific aims were posted to the password-protected Annual Meeting Website shared with all meeting attendees in advance of the meeting. The trainee volunteers discussed with Dr. Hall the aims, strengths, and weaknesses by considering each grant application's significance, investigators, innovation, approach and environment. Scores were later assigned. At the end of the grant review, two seasoned NHGRI-funded investigators, Drs. Carol Bult (The Jackson Laboratory) and David Schwartz (University of Wisconsin, Madison), took the microphone and reflected on their own personal experiences with submitting and revising grants.

- **Work-life Balance in Genomics:** This panel session about balancing personal life while having a professional career began with a brief presentation by the panel chair, Dr. Alison Antes, a K Awardee at Washington University in St. Louis. She discussed her own research on how to create a respectful work environment and overcoming challenges in the workplace. She also emphasized how leadership role set the tone of the culture at work and the importance of having mentors and support network, which can affect the well-being of an employee. Alison then turned discussion over to the panelists who included: Mildred Cho (Stanford University), Nancy Cox (Vanderbilt University), Gail Jarvik (University of Washington), Peter Park (Harvard University), Katherine Nathanson (University of Pennsylvania), and Jeanette Papp (UCLA). Each panelist shared their perspectives on how they balance their personal life while maintaining their professional careers. On a personal level, setting goals and priorities were highlighted, while working on empowering oneself before helping others was also mentioned. Panelists also discussed learning how to ask for help and the value of diversity, team building, and collaboration. Collectively, they revealed the significance of maintaining relationships with mentors and building a support network. Though it is important to learn to say no, panelists reminded the audience that it is equally important to learn to accept invitations and avail oneself for activities outside of work. Communication and maintaining relationships are essential to work-life balance. The session concluded with a very brief question and answer portion between the audience and the panel.

FEATURED TALKS

- **Training Programs in the Biomedical Sciences at the NIH Intramural Program:** Dr. Belen Hurle, Education Outreach Specialist, Division of Policy, Communications, and Education at NHGRI described the various short and long-term research opportunities available in NIH's intramural program for students (high school, post baccalaureate and graduate level) and postdoctoral fellows. Dr. Hurle described the research environment at NIH as one being very similar to an academic institution, although NIH is not a degree granting institution. However, graduate students can pursue their research theses in NIH intramural labs. Opportunities are also available to international students, fellows and scientists. Belen urged individuals interested in the NIH intramural program to visit the NIH website (https://irp.nih.gov/research-training/program-information) or to follow-up with her during the meeting. She further pointed out that fellows, clinicians and medical fellows may also be eligible for the NIH Loan Repayment Program (https://www.lrp.nih.gov/) which has as its goal the retention of highly qualified health professionals conducting research in the biomedical or biobehavioral workforce.

- **Genomics: Insights – Musings from Trainees' Lenses:** This brief session was led by Carla Easter (NHGRI) and Ragan Hart (Stanford University). Their presentation sought to introduce a new science communication digital venue for trainees as well as discuss ways to translate genomic scientific advancements in genomics and genetics to non-technical audience. They also stressed the importance of engaging community representative in scientific discourse. They introduced *Genomics: Insights*, a digital outlet for short opinions, scientific communication and narratives that highlight genomic contributions. Members of the editorial board include current and former NHGRI-funded trainees as well as NHGRI staff. This is a unique opportunity for trainees to develop scientific communication skills and experience a review process. The first issue will be available in June 2019 and announcements regarding the submission site will be forthcoming.

- **Input on Strategic Planning for Data Science Training:** NHGRI led a discussion for Training Program Faculty/Staff on data science training related to NHGRI's strategic plans. Carolyn Hutter, Director of Division of Genomic Sciences, presented feedback from the Data Science Working Group and asked for ideas on what NHGRI could incorporated into the 2020 Strategic Plan. PIs discussed several topics including: attracting data scientists to academia vs. industry, the requirements of graduate level programs, and how NHGRI could assist with identifying prospective trainees. Much discussion was held about whether or not students should be required to take more classes. PIs also discussed challenges such as inadequate undergraduate level biology programs and how to define a "data scientist." Many echoed the need for NHGRI to focus on diversity and inclusion of underrepresented populations.

CONCURRENT SESSIONS

- **Career Development Sessions:** Career Development Sessions tailored to trainee career level offered trainees the opportunity to attend one of two sessions that would best suit their educational and professional needs.

  Making the Most of Mentoring: (All Undergraduate, Post-Baccalaureate, and Graduate Student Trainees): Bruce Birren (Broad Institute) and Zia Isola (University of California, Santa Cruz) coached the undergraduate, post-baccalaureate, and graduate student trainees in making the most of their mentoring relationship. Training materials and a case study facilitated discussion. Trainees formed into small groups to deliberate among themselves prior to sharing with the group at large. Themes within the context of mentoring focused on how to understand their roles as mentees, how to adjust for a better outcome, and how to navigate ways to define their current mentoring and support network. Facilitators guided the discussions to articulate mentor roles and gave ample time for the trainees to develop strategies to fill any missing roles. The exchange among the trainee participants and facilitators explored ideas on how

effectively establishing professional mentoring relationships, engaging with mentors, and expanding their support network to advance their research career.

Negotiation and Faculty Positions (All Postdoc and Junior Faculty Trainees): Steven Joffe (University of Pennsylvania) moderated a panel for post-doctorates and junior faculty trainees. Panelists included Julie Johnson (University of Florida), Gail Jarvik (University of Washington), Scott Roberts (University of Michigan), and Michael Boehnke (University of Michigan). Trainees had the opportunity to ask questions about interviews and negotiating faculty positions. Each of the PIs on the panel discussed what their institution looks for when hiring new faculty. Trainees asked questions about navigating dual career spouses and family challenges, negotiating salary, and new management responsibilities. One of the points emphasized throughout the session was the idea of "fit" between the institution and the candidate. All panel members encouraged candidates to talk to their own mentors, the search committee chair, and recently hired faculty at the prospective institution so that trainees could obtain a bit more insight on negotiation and hiring.

- **Executive Session:** New for 2019, the Executive Session gave for Program PIs and Coordinators the opportunity to discuss topics of interest to them and to learn best practices from each other. Susanne Haga (Duke) and Bruce Korf (University of Alabama, Birmingham) moderated the discussion about training recruitment and retention. PIs gave input in how to recruit students both regionally and nationally in addition to the differences in recruitment between DAPs and T32s. Tom Pearson (University of Florida) gave a presentation on the Career Development Opportunities Network in which the Florida T32 participates. Through this network, the students have access to a variety of resources such as professional skill development, grant writing, and the NIH loan repayment program.

- **Session for Training Program Coordinators:** Program managers and coordinators met to network and share ideas in a session led by Zia Isola (University of California, Santa Cruz, DAP) and Louise Pape (University of Wisconsin, Madison, T32). Topics included various recruitment tactics for T32s and DAPs, evaluating applications and selecting students, and the balance between programing and checking in on students. They considered strategies for ensuring PIs are committed to program expectations. Everyone was enthusiastic to the idea of creating a collaborative network with the opportunity to share applicant questions, reuniting at other national conferences, and establishing a mentoring network for incoming coordinators.

CLOSING REMARKS

- Dr. Tina Gatlin, NHGRI Training Program Director, thanked everyone for coming to the meeting and being an active participant. She presented Dr. Gail Jarvik with a certificate of appreciation for her service on the Research Training Advisory Committee. Gail has served NHGRI in many capacities outside of her deep commitment to training and so NHGRI wanted to acknowledge Gail's many years of service. Tina also reminded and strongly encouraged everyone to fill out the post-meeting evaluation survey as it leads to meeting improvements every year. A special thanks was also given to Maria Perez, the meeting coordinator the past four years, for all her efforts to make the meeting flow so well and be a success. Tina adjourned the meeting by reminding attendees that the 2020 meeting will be March 30-April 1 in Philadelphia.

TRAINEE PARTICIPATION

Presenting Research: In addition to the sessions listed above, trainees had the opportunity to present their research as an oral presentation either as a platform or lightning talk. The majority of trainees also presented their research during one of two poster sessions.

Final number of Abstracts presented at the meeting	166**
Presented as a Platform Talk	15

Presented as a Lightning Talk	15
Presented as Poster	136

**60 of the 166 Abstracts presented at the meeting wished to be considered for the potential of being chosen as a platform talk and another 35 Abstracts presented at the meeting wished to be considered for the potential of being chosen as a lightning talk

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 60 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 15 trainees were chosen to give platform talks. Congratulations to the presenters:

- Session One (Moderator: Jennifer Posey, Baylor College of Medicine)
    - **Kurt Christensen:** Impact of Newborn Genomic Sequencing on Short-Term Healthcare Utilization and Associated Costs: Preliminary Findings from the BabySeq Project, *Brigham and Women's Hospital*
    - **Celeste Diaz:** Pooled Cell Painting for Massively Multiplexed Optical Phenotyping, *Broad Institute*
    - **Andreana Holowatyj:** Multi-omics analysis reveals a distinct molecular phenotype in patients with young-onset colorectal cancer, *University of Utah*
    - **Benjamin DeMeo:** Geometric sketching of single-cell data preserves transcriptional structure, *Harvard University*
    - **Madison Kilbride:** The FDA's regulatory language for DTC genetic tests (e.g. 23andMe's BRCA1/BRCA2 genetic test) may confuse consumers and providers, *University of Pennsylvania*

- Session Two (Moderator: Steven Reilly, *Broad Institute*)
    - **Brittany Baur:** Leveraging public epigenomic datasets to examine the role of regulatory variation in the three-dimensional organization of the genome, *University of Wisconsin-Madison*
    - **Juan Macias-Velasco:** Epistatic Networks Associated with Parent-of-Origin Effects on Metabolic Traits, *Washington University in St. Louis*
    - **Kellie Owens:** Clinicians' Management of Uncertainty in Genetic Testing for Inherited Cardiac Disease, *University of Pennsylvania*
    - **Samuel Rubinstein:** Compound somatic mutations in the GENIE cancer database: A descriptive analysis, *Vanderbilt University*
    - **Carolyn Baloh:** A novel approach to develop a genetic model of common variable immune deficiency (CVID), *Duke University*

- Session Three (Moderator: Megan Allyse, *Mayo Clinic*)
    - **James Hazel:** Law Enforcement and Genetic Data: An Empirical Assessment of the Relative Intrusiveness of Various Law Enforcement Activities, *Vanderbilt University*
    - **Carl de Boer:** Deciphering Eukaryotic Cis-Regulatory Logic With 100 Million Random Promoters, *Broad Institute*
    - **Heather Dron:** Communicating Research about Birth Defects: Publicity about Environmental Teratogens 1950-1974, *Stanford University*
    - **Julie Beans:** The development of a genetics and biological specimen survey for three American Indian and Alaska Native communities – a cognitive interview study, *University of Oklahoma*
    - **Yixuan He:** Gene and Environment Predictive Model for Lung Function in the UK, *Harvard University*

- **Lightning Talks**: A panel of NHGRI staff considered 35 abstracts for lightning talk presentations. The 75-minute session, moderated by Bettie Graham (NHGRI), allowed for brief, 4-minute presentations in each major field of research supported by NHGRI: genomic sciences, genomic medicine, and ELSI. The following 15 trainees were chosen to give lightning talks. Congratulations to the presenters:
    - **Colin Halverson:** Patients' Experience with Reclassifications, *Vanderbilt University*
    - **Emily Robitschek:** In vivo CRISPR screening identifies novel cancer immunotherapy targets that overcome known mechanisms of immunotherapeutic resistance, *Broad Institute*
    - **Marie Mooney:** Analysis of single nucleotide variants in zebrafish embryos after CRISPR-Cas9 editing shows no evidence of off-target inflation, *Duke University*
    - **Rebecca Wilbanks:** How to (ethically) do things with fiction, *Johns Hopkins*
    - **Joseph Park:** A genome-first approach to aggregating rare genetic variants in LMNA for association with electronic health record phenotypes, *University of Pennsylvania*
    - **Sedona Murphy:** Investigating phase transition principles dictating the dynamic folding of Polycomb-repressed DNA, at high resolution in an in vivo developmental context with single cell specificity, *Stanford University*
    - **Janie DeFriez:** Beyond Breakthrough: Discourse and Communities Around Genetic Testing on Twitter, *University of Utah*
    - **Brittney Davis:** Prevalence of high actionability pharmacogenetic variants among African Americans and European Americans in Alabama, *University of Alabama*
    - **Shirley Nieves-Rodriguez:** A synonymous DNA variant in SEPSECS and potential for development of patient specific antisense oligonucleotide therapeutic, *UCLA*
    - **Karla Claudio:** Do Tourette Syndrome, attention deficit hyperactivity disorders and obsessive-compulsive disorder share genetic risk with non-psychiatric traits?, *University of Florida*
    - **Kyle Campbell:** Human term placental villous tissue gene expression: single-cell and sorted cell-type specific profiling, *University of Michigan*
    - **Amelia Wallace:** Targeted enrichment and long-read sequencing to genotype medically-relevant genes that cannot be assayed using short-read technologies, *University of Utah*
    - **Dain Brademan:** A Web-based Platform for Custom Multi-Omic Data Visualization and Analysis, *University of Wisconsin-Madison*
    - **Alexander Schmitz:** How Does Synonymous Codon Usage Affects Gene Expression Noise in Escherichia coli?, *Washington University in St. Louis*
    - **Joseph Yracheta:** Community Engagement, Action and Raising the Civic Consciousness in Amerindigenous Communities, *University of Oklahoma*

- **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 sessions included posters in Genetic Sciences (105 posters), Genomic Medicine (21 posters) and ELSI (10 posters) across two sessions, morning and afternoon. Sessions were paired with snacks to promote a networking atmosphere among all meeting attendees. Selected meeting attendees (e.g., Program Faculty, Advisors, NHGRI staff) were assigned to posters to provide trainees with feedback on their presentation. PIs feedback was shared with trainees by email in the days following the meeting.

- **Networking**: In addition to formal presentations (posters and talks), other opportunities were provided throughout the meeting to encourage trainee participation. Networking activities included both structured and informal opportunities to talk about research and to interact with other investigators (peers and program PIs, mentors, and coordinators) interested in similar research questions, opening the door for developing collaborations among participants.
    - **Opening Reception:** A casual 90-minute reception was held on the 11th Floor of the Chase Park Plaza Royal Sonesta Hotel in the Zodiac Ballroom. Passed appetizers and a cash bar were provided in the early evening at the end of Sunday's sessions.

- **Networking Lunches:** Two networking lunches were held. Program PIs and Advisors who provided bios in advance of the meeting were assigned to a table for lunch. Meeting attendees received access in advance of the meeting to the bio directory posted to the Annual Meeting website. Trainees were encouraged to sit and talk with other trainees and Investigators at tables whose research was of interest to the trainee.
- **Happy Hour:** An informal and well-attended networking happy hour was held at The Drunken Fish, within walking distance from the hotel, at the end of the first full day of the meeting's sessions.

LIST OF APPENDICES

Appendix A: 2019 Annual Meeting Agenda

Appendix B: Attendance Roster

2019 NHGRI Research Training and Career Development Annual Meeting

The Chase Park Plaza Royal Sonesta, St. Louis, MO

Sunday, April 7

Time	Session	Room Location
1:30-3:00 pm	**Poster Setup & Meeting Registration**	Khorassan Ballroom
3:00	**Welcome** **Joy Boyer**, *NHGRI*	Khorassan Ballroom
3:05	**NHGRI Strategic Planning Session** **Eric Green**, *NHGRI Director*, **Heather Colley, Carolyn Hutter, Tina Gatlin, and Dave Kaufman**, *NHGRI*	
4:35	**Training Programs in the Biomedical Sciences at the NIH Intramural Program** **Belen Hurle**, *NHGRI*	
5:00-6:30	**Opening Reception**	Zodiac Ballroom (11th floor)

Monday, April 8

Time	Session	Room Location
7:00-8:00 am	**Breakfast Buffet**	Starlight Ballroom (11th floor)
7:00-8:00	**Poster Setup**	Khorassan Ballroom
8:00	**Meeting Announcements** **Heather Colley**, *NHGRI*	Khorassan Ballroom
8:05	**Keynote: Enhancing Ethical Genomic Research with Indigenous Communities** **Keolu Fox**, *University of California, San Diego*	
9:05	**Poster Session 1**: Odd Numbered Posters	
10:25	**Trainee Platform Talks** Moderator: **Jennifer Posey**, *Baylor College of Medicine* **Kurt Christensen: Impact of Newborn Genomic Sequencing on Short-Term Healthcare Utilization and Associated Costs: Preliminary Findings from the BabySeq Project**, *Brigham and Women's Hospital* **Celeste Diaz: Pooled Cell Painting for Massively Multiplexed Optical Phenotyping**, *Broad Institute* **Andreana Holowatyj: Multi-omics analysis reveals a distinct molecular phenotype in patients with young-onset colorectal cancer**, *University of Utah* **Benjamin DeMeo: Geometric sketching of single-cell data preserves transcriptional structure**, *Harvard University*	

Trainee Platform Talks (continued)

Madison Kilbride: The FDA's regulatory language for DTC genetic tests (e.g. 23andMe's BRCA1/BRCA2 genetic test) may confuse consumers and providers, *University of Pennsylvania*

11:30	**Networking Plated Lunch** **Program Director Bios available on website (click here)**	Starlight Ballroom (11th floor)

1:15 pm	**Trainee Platform Talks** **Moderator: Steven Reilly**, *Broad Institute* **Brittany Baur: Leveraging public epigenomic datasets to examine the role of regulatory variation in the three-dimensional organization of the genome**, *University of Wisconsin-Madison* **Juan Macias-Velasco: Epistatic Networks Associated with Parent-of-Origin Effects on Metabolic Traits**, *Washington University in St. Louis* **Kellie Owens: Clinicians' Management of Uncertainty in Genetic Testing for Inherited Cardiac Disease**, *University of Pennsylvania* **Samuel Rubinstein: Compound somatic mutations in the GENIE cancer database: A descriptive analysis**, *Vanderbilt University* **Carolyn Baloh: A novel approach to develop a genetic model of common variable immune deficiency (CVID)**, *Duke University*	Khorassan Ballroom

2:05	**CONCURRENT SESSIONS** **Career Development** **Making the Most of Mentoring** All Undergraduate, Post-Baccalaureate, and Graduate Student Trainees **Moderators: Bruce Birren**, *Broad Institute*; **Zia Isola**, *UCSC*	Khorassan Ballroom
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	Negotiation and Faculty Positions All Postdoc and Junior Faculty Trainees **Moderator: Steven Joffe**, *University of Pennsylvania* **Panelists: Michael Boehnke**, *University of Michigan*; **Julie Johnson**, *University of Florida*; **Scott Roberts**, *University of Michigan*; **Gail Jarvik**, *University of Washington*	Regency Ballroom

3:05	**Group Photograph + Break**	

3:20	**CONCURRENT SESSIONS** **Session for Training Program Coordinators** **Moderators: Louise Pape**, *University of Wisconsin-Madison*; **Zia Isola**, *UCSC*	Regency Ballroom
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	Trainee Lightning Talks All Trainees **Moderator: Bettie Graham**, *NHGRI* **Colin Halverson: Patients' Experience with Reclassifications,** *Vanderbilt University*	Khorassan Ballroom

Trainee Lightning Talks (continued)

Emily Robitschek: In vivo CRISPR screening identifies novel cancer immunotherapy targets that overcome known mechanisms of immunotherapeutic resistance, *Broad Institute*

Marie Mooney: Analysis of single nucleotide variants in zebrafish embryos after CRISPR-Cas9 editing shows no evidence of off-target inflation, *Duke University*

Rebecca Wilbanks: How to (ethically) do things with fiction, *Johns Hopkins*

Joseph Park: A genome-first approach to aggregating rare genetic variants in LMNA for association with electronic health record phenotypes, *University of Pennsylvania*

Sedona Murphy: Investigating phase transition principles dictating the dynamic folding of Polycomb-repressed DNA, at high resolution in an in vivo developmental context with single cell specificity, *Stanford University*

Janie DeFriez: Beyond Breakthrough: Discourse and Communities Around Genetic Testing on Twitter, *University of Utah*

Brittney Davis: Prevalence of high actionability pharmacogenetic variants among African Americans and European Americans in Alabama, *University of Alabama*

Shirley Nieves-Rodriguez: A synonymous DNA variant in SEPSECS and potential for development of patient specific antisense oligonucleotide therapeutic, *UCLA*

Karla Claudio: Do Tourette Syndrome, attention deficit hyperactivity disorders and obsessive-compulsive disorder share genetic risk with non-psychiatric traits?, *University of Florida*

Kyle Campbell: Human term placental villous tissue gene expression: single-cell and sorted cell-type specific profiling, *University of Michigan*

Amelia Wallace: Targeted enrichment and long-read sequencing to genotype medically-relevant genes that cannot be assayed using short-read technologies, *University of Utah*

Dain Brademan: A Web-based Platform for Custom Multi-Omic Data Visualization and Analysis, *University of Wisconsin-Madison*

Alexander Schmitz: How Does Synonymous Codon Usage Affects Gene Expression Noise in Escherichia coli?, *Washington University in St. Louis*

Joseph Yracheta: Community Engagement, Action and Raising the Civic Consciousness in Amerindigenous Communities, *University of Oklahoma*

4:35	**Genomics: Insights – Musings from Trainees' Lenses** **Carla Easter**, *NHGRI*; **Ragan Hart**, *Stanford University*	Khorassan Ballroom
4:50	**Poster Session 2**: Even Numbered Posters	
6:00	ADJOURN	
6:00-7:15	**Networking Happy Hour (at your own expense)**	The Drunken Fish

Tuesday, April 9

Time	Session	Room Location
7:00-8:00 am	**Breakfast Buffet**	Starlight Ballroom (11th floor)
8:15	**Work-life Balance in Genomics** **Moderator**: **Alison Antes**, *Washington University in St. Louis* **Panelists: Mildred Cho**, *Stanford University*; **Nancy Cox**, V*anderbilt University*; **Gail Jarvik**, *University of Washington*; **Peter Park**, *Harvard University*; **Katherine Nathanson**, *University of Pennsylvania*; **Jeanette Papp**, *UCLA*	Khorassan Ballroom
9:05	**Break**	
	CONCURRENT SESSIONS	
9:15	**Mock Grant Review** All Trainees **Scientific Review Officer: Rudy Pozzatti**, *NHGRI*; **Review Chair: Ira Hall**, *Washington University in St. Louis* **Trainee Participants: Elizabeth Gonzalez**, *Broad Institute;* **Rachel Dalton**, *University of Florida;* **Sidharth Jain**, *Broad Institute;* **Prakriti Paul**, *Princeton University;* **Ryan Clark**, *University of Wisconsin-Madison;* **Anika Gupta**, *Harvard University;* **Julie Beans**, *University of Oklahoma;* **Brittney Davis**, *University of Alabama* **PI Participants: Carol Bult**, *The Jackson Laboratory;* **David Schwartz**, *University of Wisconsin-Madison;* **Julie Johnson**, *University of Florida*	Khorassan Ballroom
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	Executive Session for Program PIs/Coordinators **Moderators: Susanne Haga**, *Duke University;* **Bruce Korf**, *University of Alabama*	Regency Ballroom
10:45	**Break**	
10:55	**CONCURRENT SESSIONS** **Input on Strategic Planning for Data Science Training** Executive Session for NHGRI staff and Program PIs/Coordinators **Moderators: Carolyn Hutter**, *NHGRI;* **Tina Gatlin**, *NHGRI*	Regency Ballroom
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	Trainee Platform Talks **Moderator: Megan Allyse**, *Mayo Clinic* **James Hazel: Law Enforcement and Genetic Data: An Empirical Assessment of the Relative Intrusiveness of Various Law Enforcement Activities**, *Vanderbilt University*	Khorassan Ballroom

Trainee Platform Talks (continued)

Carl de Boer: **Deciphering Eukaryotic Cis-Regulatory Logic With 100 Million Random Promoters**, *Broad Institute*

Heather Dron: **Communicating Research about Birth Defects: Publicity about Environmental Teratogens 1950-1974**, *Stanford University*

Julie Beans: **The development of a genetics and biological specimen survey for three American Indian and Alaska Native communities – a cognitive interview study**, *University of Oklahoma*

Yixuan He: **Gene and Environment Predictive Model for Lung Function in the UK**, *Harvard University*

11:45	**Networking Box Lunch** **Program Director Bios available on website (click here)**	Starlight Ballroom (11th floor)
1:15 pm	**Closing Remarks** **Tina Gatlin**, *NHGRI*	Starlight Ballroom (11th floor)
1:20	ADJOURN	
1:20	Closed Executive Session with DACC, NHGRI, and Advisors	Regency Ballroom

First Name	Last Name	Program	Role	Training Level
Mai	Abdusamad	Broad Institute	Trainee	Post-baccalaureate Student
Josh	Akey	Princeton University	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Megan	Allyse	Mayo Clinic	Trainee	Faculty
Tiffany	Amariuta	Harvard University	Trainee	Graduate Student
Rebecca	Anderson	The University of Utah	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Xavier	Anderson	Washington University in St. Louis	Trainee	Postbaccalaureate Student
Paola	Angulo	University of California, Santa Cruz	Trainee	Undergraduate Student
Aubrey	Annis	University of Michigan	Trainee	Graduate Student
Alison	Antes	Washington University in St. Louis	Trainee	Faculty
Adam	Arkin	University of California, Berkeley	Trainee Mentor (Mentor to a Fellow or K Awardee)	
Monica	Arniela	Broad Institute	Trainee	Post-baccalaureate Student
Megan	Baldridge	Washington University in St. Louis	Trainee Mentor (Mentor to a Fellow or K Awardee)	
Dustin	Baldridge	Washington University in St. Louis	Trainee	Faculty
Carolyn	Baloh	Duke University	Trainee	Post-Doctoral or Fellow
Gregory	Barsh	University of Alabama at Birmingham	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Alison	Barton	Harvard University	Trainee	Graduate Student
Andrew	Bass	Princeton University	Trainee	Graduate Student
Claire	Baumer	Stanford University	Trainee	Graduate Student
Brittany	Baur	University of Wisconsin, Madison	Trainee	Post-Doctoral or Fellow
Julie	Beans	The University of Oklahoma	Trainee	Post-Doctoral or Fellow
Eyal	Ben-David	University of California, Los Angeles	Trainee	Post-Doctoral or Fellow
Alyssa	Benjamin	Stanford University	Trainee	Graduate Student
Yehuda	Ben-Shahar	Washington University in St. Louis	Trainee Mentor (Mentor to a Fellow or K Awardee)	
Brent	Biddy	Washington University in St. Louis	Trainee	Graduate Student
Bruce	Birren	Broad Institute	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Jessica	Blanchard	The University of Oklahoma	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Emily	Blauel	University of Pennsylvania	Trainee	Post-Doctoral or Fellow
Freida	Blostein	University of Michigan	Trainee	Graduate Student

First Name	Last Name	Program	Role	Training Level
Michael	Boehnke	University of Michigan	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Joy	Boyer	NHGRI	NIH/NHGRI	
Dain	Brademan	University of Wisconsin, Madison	Trainee	Graduate Student
Michael	Brent	Washington University in St. Louis	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Stefanie	Brizuela	University of California, Santa Cruz	Trainee	Undergraduate Student
Haley	Brock	The University of Utah	Trainee	Undergraduate Student
Maja	Bucan	University of Pennsylvania	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Carol	Bult	The Jackson Laboratory	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff) and Advisor (Member of NHGRI Research and Training Advisory Committee)	
Kathryn	Burch	University of California, Los Angeles	Trainee	Graduate Student
David	Burke	University of Michigan	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Claudia	Cabrera	Washington University in St. Louis	Trainee	Postbaccalaureate Student
Kyle	Campbell	University of Michigan	Trainee	Graduate Student
Chloe	Chan	Broad Institute	Trainee	Post-baccalaureate Student
Xian	Chang	University of California, Santa Cruz	Trainee	Graduate Student
Sherry	Chao	Harvard University	Trainee	Graduate Student
Hannah	Chervitz	University of Pennsylvania	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Mildred	Cho	Stanford University	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Kurt	Christensen	Brigham and Women's Hospital	Trainee	Faculty
Benjamin	Chu	University of California, Los Angeles	Trainee	Graduate Student
Ryan	Chung	University of California, Berkeley	Trainee	Graduate Student
Ryan	Clark	University of Wisconsin, Madison	Trainee	Post-Doctoral or Fellow
Karla	Claudio	University of Florida	Trainee	Post-Doctoral or Fellow
Evan	Cofer	Princeton University	Trainee	Graduate Student

First Name	Last Name	Program	Role	Training Level
Barak	Cohen	Washington University in St. Louis	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Heather	Colley	NHGRI	NIH/NHGRI	
Noah	Collins	The University of Oklahoma	Trainee	Graduate Student
Daniel	Cotter	Stanford University	Trainee	Graduate Student
Robert	Coukos	Stanford University	Trainee	Graduate Student
Nancy	Cox	Vanderbilt University	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Rachel	Dalton	University of Florida	Trainee	Post-Doctoral or Fellow
Alexandre	Daly	University of Michigan	Trainee	Graduate Student
Michael	Daniel	University of Alabama at Birmingham	Trainee	Post-Doctoral or Fellow
Ruth	Dannenfelser	Princeton University	Trainee	Graduate Student
Petar	Datsov	Washington University in St. Louis	DACC	
Brittney	Davis	University of Alabama at Birmingham	Trainee	Post-Doctoral or Fellow
Carl	de Boer	Broad Institute	Trainee	Post-Doctoral or Fellow
Janie	DeFriez	The University of Utah	Trainee	Undergraduate Student
Tina	Del Carpio	University of California, Los Angeles	Trainee	Graduate Student
Benjamin	DeMeo	Harvard University	Trainee	Graduate Student
Zelalem	Demere	Broad Institute	Trainee	Post-baccalaureate Student
Brittany	Demmitt	Stanford University	Trainee	Post-Doctoral or Fellow
Josh	Denny	Vanderbilt University	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Celeste	Diaz	Broad Institute	Trainee	Post-baccalaureate Student
Alejandro	Diaz	University of Washington	Trainee	Undergraduate Student
Brittany	Dickson	The University of Utah	Trainee	Graduate Student
Shihab	Dider	University of California, Berkeley	Trainee	Graduate Student
Gregory	Diggs-Yang	University of Washington	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Mariana	DoCarmo	Broad Institute	Trainee	Post-baccalaureate Student
Kara	Dolinski	Princeton University	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Alicia	Dominguez	University of Michigan	Trainee	Graduate Student
Gabrielle	Dotson	University of Michigan	Trainee	Graduate Student
Yao	Douglas	Harvard University	Trainee	Graduate Student
Heather	Dron	Stanford University	Trainee	Post-Doctoral or Fellow
Judy	Du	Princeton University	Trainee	Graduate Student
Alan	Du	Washington University in St. Louis	Trainee	Graduate Student
James	DuBois	Washington University in St. Louis	Trainee Mentor (Mentor to a Fellow or K Awardee)	

First Name	Last Name	Program	Role	Training Level
Susan	Dutcher	Washington University in St. Louis	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Carla	Easter	NHGRI	NIH/NHGRI	
Todd	Edwards	Vanderbilt University	Trainee Mentor (Mentor to a Fellow or K Awardee)	
Evan	Eichler	University of Washington	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Michael	Eisen	University of California, Berkeley	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Amanda	Elsey	University of Florida	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Benjamin	Emert	University of Pennsylvania	Trainee	Graduate Student
Jesse	Engreitz	Broad Institute	Trainee	Post-Doctoral or Fellow
Michael	Engstrom	University of Wisconsin, Madison	Trainee	Post-Doctoral or Fellow
Danielle	Faivre	University of Washington	Trainee	Graduate Student
Kyle	Feeley	University of Alabama at Birmingham	Trainee	Post-Doctoral or Fellow
Rafael	Feliciano	Washington University in St. Louis	Trainee	Postbaccalaureate Student
Katherine	Flannery	Harvard University	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Harmony	Folse	Stanford University	Trainee	Graduate Student
Juliet	Forman	Broad Institute	Trainee	Post-baccalaureate Student
Keolu	Fox	University of California, San Diego	Invited Keynote Speaker	
Trenton	Frisbie	University of Michigan	Trainee	Graduate Student
Anat	Fuchs	Princeton University	Trainee	Graduate Student
Patrick	Fuller	University of California, Santa Cruz	Trainee	Undergraduate Student
Isabel	Gabel	University of Pennsylvania	Trainee	Post-Doctoral or Fellow
Sylvia	Garvey	NHGRI	NIH/NHGRI	
Tina	Gatlin	NHGRI	NIH/NHGRI	
Nicole	Gay	Stanford University	Trainee	Graduate Student
Steven	Gazal	Harvard University	Trainee Mentor (Mentor to a Fellow or K Awardee)	
David	Gennert	Stanford University	Trainee	Graduate Student
Ariel	Gewirtz	Princeton University	Trainee	Graduate Student
Madelyn	Gillentine	University of Washington	Trainee	Post-Doctoral or Fellow
Geoffrey	Ginsburg	Duke University	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Page	Goddard	Stanford University	Trainee	Graduate Student
Lourdes	Gomez	University of California, Santa Cruz	Trainee	Undergraduate Student
Elizabeth	Gonzalez	Broad Institute	Trainee	Post-baccalaureate Student
Bettie	Graham	NHGRI	NIH/NHGRI	

First Name	Last Name	Program	Role	Training Level
Eric	Green	NHGRI	NIH/NHGRI	
Richard Edward	Green	University of California, Santa Cruz	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Emily	Greenwald	Stanford University	Trainee	Graduate Student
Greg	Gundersen	Princeton University	Trainee	Graduate Student
Anika	Gupta	Harvard University	Trainee	Graduate Student
Susanne	Haga	Duke University	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Ira	Hall	Washington University in St. Louis	Mock Grant Review Invited Chair	
Colin	Halverson	Vanderbilt University, CEER Program	Trainee	Post-Doctoral or Fellow
William	Hankey	Duke University	Trainee	Post-Doctoral or Fellow
Sarah	Hanks	University of Michigan	Trainee	Graduate Student
Ragan	Hart	Stanford University	Trainee Editoral Board	
Catherine	Haskell	Harvard University	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Gabriel	Hassler	University of California, Los Angeles	Trainee	Graduate Student
Marina	Haukness	University of California, Santa Cruz	Trainee	Graduate Student
Yixuan	He	Harvard University	Trainee	Graduate Student
Kyle	Hess	University of Washington	Trainee	Graduate Student
Collin	Hickmann	University of California, Berkeley	Trainee	Graduate Student
Ian	Holmes	University of California, Berkeley	Trainee Mentor (Mentor to a Fellow or K Awardee)	
Andreana	Holowatyj	University of Utah	Trainee	Post-Doctoral or Fellow
Farhad	Hormozdiari	Harvard University	Trainee	Post-Doctoral or Fellow
Ranad	Humeidi	Broad Institute	Trainee	Post-baccalaureate Student
Belen	Hurle	NHGRI	NIH/NHGRI	
Carolyn	Hutter	NHGRI	NIH/NHGRI	
Zia	Isola	University of California, Santa Cruz	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Sidharth	Jain	Broad Institute	Trainee	Post-baccalaureate Student
Gail	Jarvik	University of Washington	Advisor (Member of NHGRI Research and Training Advisory Committee)	
Jamie	Jeffries	Stanford University	Trainee	Graduate Student
Steve	Joffe	University of Pennsylvania	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Julie	Johnson	University of Florida	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	

First Name	Last Name	Program	Role	Training Level
Lynn	Jorde	University of Utah	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Samuel	Juarez-Solis	University of Washington	Trainee	Undergraduate Student
Stephanie	Kabeche	Stanford University	Trainee	Graduate Student
Yiming	Kang	Washington University in St. Louis	Trainee	Graduate Student
Ashley	Kapron	University of Utah	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
David	Kaufman	NHGRI	NIH/NHGRI	
Jacob	Keaton	Vanderbilt University	Trainee	Post-Doctoral or Fellow
Dawn	Keene	University of Michigan	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Kristen	Kelly	University of Michigan	Trainee	Graduate Student
Alex	Kern	Stanford University	Trainee	Graduate Student
Alex	Khodaverdian	University of California, Berkeley	Trainee	Graduate Student
Madison	Kilbride	University of Pennsylvania	Trainee	Post-Doctoral or Fellow
Juhyun	Kim	University of California, Los Angeles	Trainee	Graduate Student
Ellen	Kim	University of Michigan	Trainee	Graduate Student
Junhyong	Kim	University of Pennsylvania	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Ben	Kompa	Harvard University	Trainee	Graduate Student
Bruce	Korf	University of Alabama at Birmingham	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Kiran	Kumar	Broad Institute	Trainee	Post-baccalaureate Student
Tsung-Ting	Kuo	University of California, San Diego	Trainee	Post-Doctoral or Fellow
Nicolette	Laird	Washington University in St. Louis	Trainee	Graduate Student
Nicholas	Lammers	University of California, Berkeley	Trainee	Graduate Student
Alfonso	Landeros	University of California, Los Angeles	Trainee	Graduate Student
Meiyee	Law	The Jackson Laboratory	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Dylan	Lawrence	Washington University in St. Louis	Trainee	Graduate Student
Heather	Lawson	Washington University in St. Louis	Trainee Mentor (Mentor to a Fellow or K Awardee)	
David	Lee	University of Pennsylvania	Trainee	Graduate Student
Mike	Levine	Princeton University	Trainee Mentor (Mentor to a Fellow or K Awardee)	
Kevin	Liao	University of Michigan	Trainee	Graduate Student
George	Linderman	Yale University	Trainee	Graduate Student
Andrew	Liu	Harvard University	Trainee	Graduate Student

First Name	Last Name	Program	Role	Training Level
Kai	Loell	Washington University in St. Louis	Trainee	Graduate Student
Matthew	Lollar	University of Wisconsin, Madison	Trainee	Graduate Student
Justin	Lund	The University of Oklahoma	Trainee	Graduate Student
Joe	Luquette	Harvard University	Trainee	Graduate Student
Rosa	Ma	Stanford University	Trainee	Graduate Student
Juan	Macias	Washington University in St. Louis	Trainee	Graduate Student
Teri	Manolio	NHGRI	NIH/NHGRI	
Nicole	Martinez-Martin	Stanford University	Trainee	Post-Doctoral or Fellow
Christian	Mason	University of California, Los Angeles	Trainee	Graduate Student
Matthew	McCoy	Stanford University	Trainee	Post-baccalaureate Student
Aaron	McKenna	University of Washington	Trainee	Post-Doctoral or Fellow
Katelyn	McKown	Stanford University	Trainee	Graduate Student
Antonio	Mendoza	The Jackson Laboratory	Trainee	Undergraduate Student
Robin	Meyers	Stanford University	Trainee	Graduate Student
Jason	Miller	University of Pennsylvania	Trainee	Post-Doctoral or Fellow
Tyne	Miller-Fleming	Vanderbilt University	Trainee	Post-Doctoral or Fellow
Robert	Millikin	University of Wisconsin, Madison	Trainee	Graduate Student
Apexa	Modi	University of Pennsylvania	Trainee	Graduate Student
Marie	Mooney	Duke University	Trainee	Post-Doctoral or Fellow
Jason	Moore	University of Pennsylvania	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Samantha	Morris	Washington University in St. Louis	Trainee Mentor (Mentor to a Fellow or K Awardee)	
Arnav	Moudgil	Washington University in St. Louis	Trainee	Graduate Student
Brodie	Mumphrey	University of Michigan	Trainee	Graduate Student
Sedona	Murphy	Stanford University	Trainee	Graduate Student
Antonio	Muscarella	Princeton University	Trainee	Graduate Student
Aparna	Nathan	Harvard University	Trainee	Graduate Student
Kate	Nathanson	University of Pennsylvania	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Shirley	Nieves	University of California, Los Angeles	Trainee	Graduate Student
Graham	Northrup	University of California, Berkeley	Trainee	Graduate Student
Michelle	Noyes	University of Washington	Trainee	Graduate Student
Peter	Orchard	University of Michigan	Trainee	Graduate Student
Kellie	Owens	University of Pennsylvania	Trainee	Post-Doctoral or Fellow
Louise	Pape	University of Wisconsin, Madison	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Jeanette	Papp	University of California, Los Angeles	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	

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Peter	Park	Harvard University	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Joseph	Park	University of Pennsylvania	Trainee	Graduate Student
Lisa	Parker	University of Pittsburgh	Advisor (Member of NHGRI Research and Training Advisory Committee)	
Roshni	Patel	Stanford University	Trainee	Graduate Student
Prakriti	Paul	Princeton University	Trainee	Graduate Student
Thomas	Pearson	University of Florida	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Maria	Pérez	Washington University in St. Louis	DACC	
Stefan	Pietrzak	University of Wisconsin, Madison	Trainee	Graduate Student
Jennifer	Posey	Baylor College of Medicine	Trainee	Faculty
Rudy	Pozzatti	NHGRI	NIH/NHGRI	
Hugh	Purdy	University of Wisconsin, Madison	Trainee	Graduate Student
Jingya	Qiu	University of Pennsylvania	Trainee	Graduate Student
Alex	Raphael	NHGRI	NIH/NHGRI	
Taylor	Real	University of California, Santa Cruz	Trainee	Undergraduate Student
Pamela	Recio	Washington University in St. Louis	Trainee	Postbaccalaureate Student
Roman	Reggiardo	University of California, Santa Cruz	Trainee	Graduate Student
Steven	Reilly	Broad Institute	Trainee	Post-Doctoral or Fellow
Andy	Renteria	Stanford University	Trainee	Graduate Student
Nosheen	Reza	University of Pennsylvania	Trainee	Post-Doctoral or Fellow
Treva	Rice	Washington University in St. Louis	DACC	
Harneet	Rishi	University of California, Berkeley	Trainee	Graduate Student
Scott	Roberts	University of Michigan	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
DeElegant	Robinson	University of Wisconsin, Madison	Trainee	Graduate Student
Emily	Robitschek	Broad Institute	Trainee	Post-baccalaureate Student
Nicole	Rockweiler	Washington University in St. Louis	Trainee	Graduate Student
Priscilla	Rodriguez Lopez	Washington University in St. Louis	Trainee	Postbaccalaureate Student
Daniel	Rokhsar	University of California, Berkeley	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Jean	Rosario	University of Pennsylvania	Trainee	Graduate Student
Samuel	Rubinstein	Vanderbilt University	Trainee	Post-Doctoral or Fellow
Laurie	Rumker	Harvard University	Trainee	Graduate Student
Christine	Rygiel	University of Michigan	Trainee	Graduate Student

First Name	Last Name	Program	Role	Training Level
Brandon	Saint-John	University of California, Santa Cruz	Trainee	Graduate Student
Alexander	Schmitz	Washington University in St. Louis	Trainee	Graduate Student
Kelly	Schwartz	University of Wisconsin, Madison	Trainee	Post-Doctoral or Fellow
David	Schwartz	University of Wisconsin, Madison	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Arend	Sidow	Stanford University	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Ben	Siranosian	Stanford University	Trainee	Graduate Student
Riley	Skeen-Gaar	Princeton University	Trainee	Graduate Student
Gloria	Slattum	University of Utah	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Hunter	Smith	Johns Hopkins, CEER Program	Trainee	Post-Doctoral or Fellow
Ian	Smith	University of Washington	Trainee	Graduate Student
Michael	Snyder	Stanford University	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Eric	Sobel	University of California, Los Angeles	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Nadiya	Sosonkina	University of Alabama at Birmingham	Trainee	Post-Doctoral or Fellow
Paul	Spicer	The University of Oklahoma	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Charles	Starr	Stanford University	Trainee	Graduate Student
Cody	Steely	University of Utah	Trainee	Post-Doctoral or Fellow
Cory	Stingl	Duke University	Trainee	Post-Doctoral or Fellow
John	Storey	Princeton University	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Arvis	Sulovari	University of Washington	Trainee	Post-Doctoral or Fellow
Kieran	Sweeney	University of Wisconsin, Madison	Trainee	Graduate Student
Gabriella	Tenorio	The Jackson Laboratory	Trainee	Undergraduate Student
Daniel	Thiel	University of Michigan	Trainee	Graduate Student
Neil	Thomas	University of California, Berkeley	Trainee	Graduate Student
Cameron	Thomas	University of Florida	Trainee	Post-Doctoral or Fellow
Alexis	Thornton	University of California, Santa Cruz	Trainee	Graduate Student
Susanne	Tilk	Stanford University	Trainee	Graduate Student
Anji	Trujilo	University of Wisconsin, Madison	Trainee	Graduate Student

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Lisa	Truong	University of California, Los Angeles	Trainee	Graduate Student
Rachel	Ungar	Stanford University	Trainee	Graduate Student
Eric	Van Nostrand	University of California, San Diego	Trainee	Post-Doctoral or Fellow
Gisselle	Velez-Ruiz	Broad Institute	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Vinayak	Viswanadham	Harvard University	Trainee	Graduate Student
Roger	Volden	University of California, Santa Cruz	Trainee	Graduate Student
Alexis	Walker	Johns Hopkins, CEER Program	Trainee	Post-Doctoral or Fellow
Amelia	Wallace	University of Utah	Trainee	Post-Doctoral or Fellow
Janey	Wang	Vanderbilt University	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Kathryn	Weinand	Harvard University	Trainee	Graduate Student
Rebecca	Wilbanks	Johns Hopkins, CEER Program	Trainee	Post-Doctoral or Fellow
John	Wolters	University of Wisconsin, Madison	Trainee	Post-Doctoral or Fellow
Tim	Wood	Broad Institute	Trainee	Post-baccalaureate Student
Nir	Yosef	University of California, Berkeley	Trainee Mentor (Mentor to a Fellow or K Awardee)	
H. Joseph	Yost	University of Utah	Training Program Faculty/Staff (Program PI, Training Coordinator or Staff)	
Jennifer	Young	Stanford University	Trainee	Post-Doctoral or Fellow
Joseph	Yracheta	The University of Oklahoma	Trainee	Graduate Student