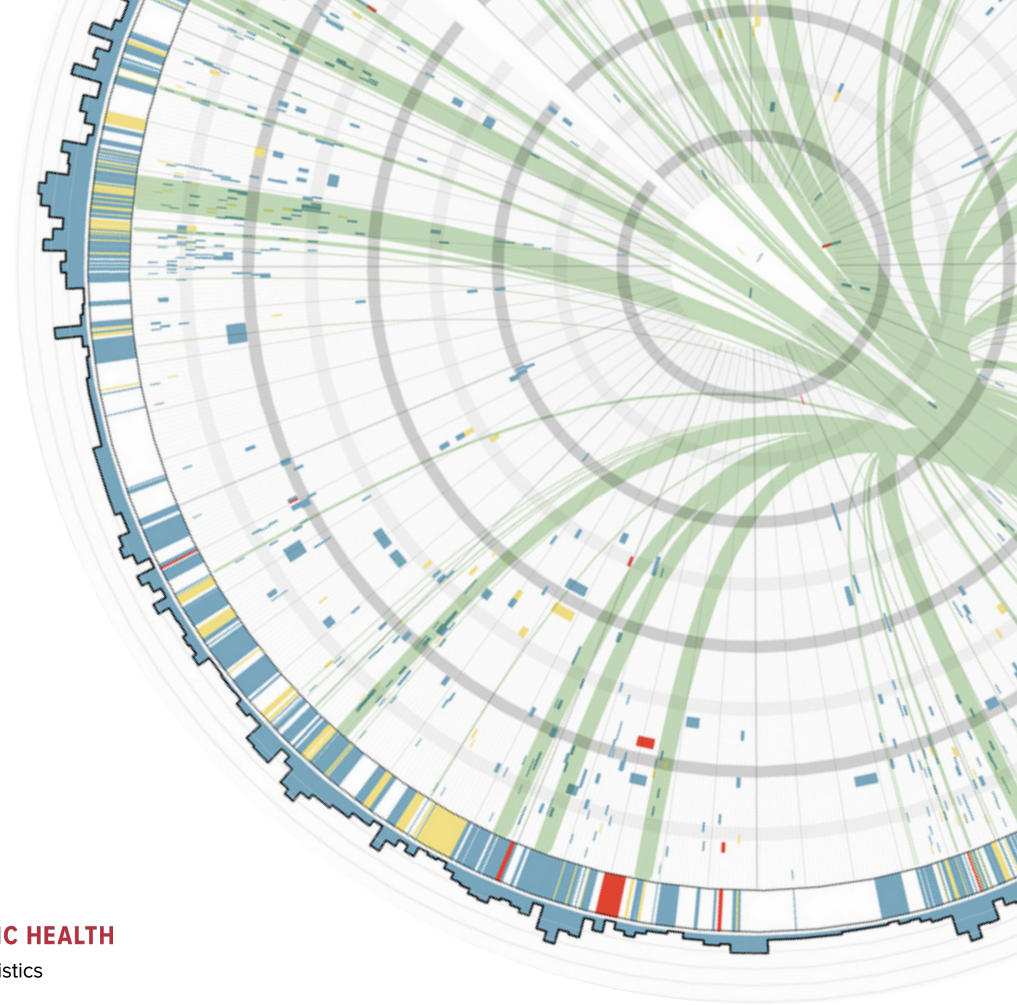


HARVARD T.H. CHAN | SCHOOL OF PUBLIC HEALTH
Department of Biostatistics

PIPELINES INTO **BIOSTATISTICS**

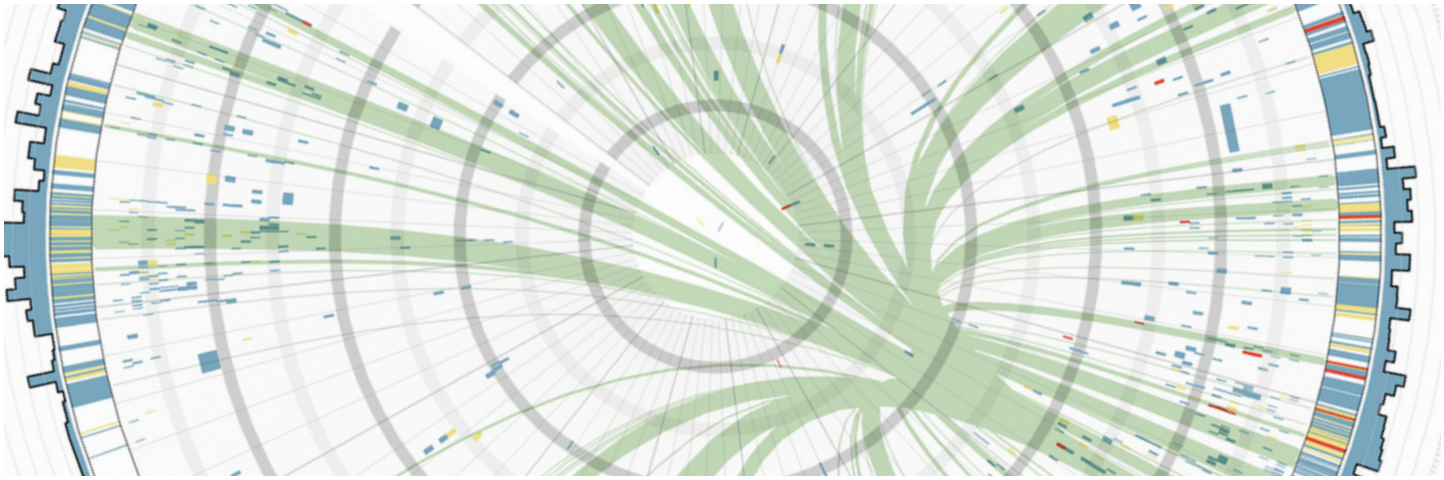
Dedicated to increasing the presence of underrepresented groups in Biostatistics and Computational Biology through formal training, collaborative research, and mentoring.

Visiting Faculty Workshop | July 20-22, 2016
Annual Symposium | Thursday, July 21, 2016

#HarvardSPB

The symposium is sponsored by NIH Grant T36GM093773, the Harvard Chan Department of Biostatistics & the Office of Diversity and Inclusion

PIPELINES INTO **BIOSTATISTICS**



Introduction

#HarvardSPB

In 1994, the Department of Biostatistics at Harvard T.H. Chan School of Public Health established the Summer Program in Quantitative Sciences to encourage underrepresented minority students' future participation in graduate programs in Biostatistics and Public Health. The program is supported by a new T36 grant from NIGMS: "Pipelines into Biostatistics: Training in Quantitative Public Health" for which Dr. Rebecca Betensky is the Principal Investigator. The Summer Program is now expanded to include a 6 week summer program, a Visiting Faculty Workshop, and a post-baccalaureate internship program.

The Pipelines Into Biostatistics Annual Symposium is a new component to what is now called the Summer Program in Biostatistics and Computational Biology. Attendees are current and past summer program participants, faculty, fellows, graduate students, visiting faculty from minority serving institutions, the external advisory board, and other members of the Longwood community.

In conjunction with the Symposium, we are hosting a three-day Faculty Workshop. We have invited six faculty members from quantitative fields at minority serving undergraduate institutions to attend our annual symposium and to spend two days in intensive meetings with Harvard Chan faculty and students. Our goal is to expose these faculty members to the field of quantitative Public Health so that they can return and educate their undergraduate students about these exciting career options. We also aim to learn from visiting faculty how to strengthen our pipeline programs and better support underrepresented students in our graduate programs.

PIPELINES INTO **BIOSTATISTICS**

Keynote Speaker

F. DuBois Bowman, Ph.D.

Professor of Biostatistics
Chairman, Department of Biostatistics
Mailman School of Public Health
Columbia University

"Biostatistics: Paving the Way in the Big Data Era"

Data science is transforming our society by driving discoveries and decision-making in academia, government, and industry. Public health and medicine are clear examples, where we have unprecedented access to data that can be used to improve health. Biostatistics plays a vital role by providing the rigorous analytic tools to extract information from data. In this talk, Dr. Bowman will provide examples of how biostatistics is leading the way to improved health in the big data era, including examples drawn from his own research in brain imaging. Bowman will also discuss his professional career in biostatistics and the critical need for diversity in the field. Training in biostatistics or related quantitative areas is a sound investment toward an exciting career to address the major public health problems of the world.

DuBois Bowman is Chairman and Professor of the Biostatistics at Columbia University's Mailman School of Public Health. He is a renowned expert in the development and applications of biostatistical methods for brain imaging data. Dr. Bowman joined the faculty at Columbia in 2014, bringing an exciting vision to lead the Department in a new era characterized by the acquisition and analysis of large complex biomedical data sets in areas such as genomics, brain science, clinical trials, geographic information systems, infectious diseases, and simulation science.

Dr. Bowman is a renowned expert in brain imaging research, and his research program has important implications for neurological disorders such as Parkinson's disease as well as mental health disorders such as major depression and schizophrenia. For example, his research helps to reveal brain patterns that reflect disruption from psychiatric diseases, to detect biomarkers for neurological diseases, and to determine particular therapeutic treatments that are best suited for particular patients. His work encompasses multiple imaging modalities, including functional magnetic resonance imaging, diffusion tensor imaging, and positron emission tomography. His research program has attracted substantial extramural funding, including an NIH-sponsored project, "Analytic methods for determining multimodal biomarkers for Parkinson's Disease," and he has also partnered with other drivers of Parkinson's disease research, including the Michael J. Fox Foundation. Dr. Bowman is an elected Fellow of the American Statistical Association and past-president of the Eastern North American Region (ENAR) of the International Biometric Society. He has served as associate editor of both Biometrics and the Journal of the American Statistical Association. Dr. Bowman obtained his BS in Mathematics from Morehouse College, his MS in Biostatistics from the University of Michigan, and his PhD in Biostatistics from the University of North Carolina, Chapel Hill.

Visiting Faculty Bios

Joseph Bak, Ph.D.

Joseph Bak has been a member of the mathematics faculty at City College of New York since 1970. City College of NY has an unusually diverse student body with over 100 languages spoken on campus. The majority of CCNY students are science and engineering majors, with many of them hoping to be the first college graduates in their families. Aside from his teaching and research, Bak serve as the Assistant Chairman of the mathematics department and advisor to the math majors. Dr. Bak earned his BA, MA and PhD in math from Yeshiva University.

Mohammed Karim, Ph.D.

Mohammed Karim is a Professor of Mathematics at Alabama A&M University. His areas of research interest include Number Theory, Harmonic Analysis, and Theory of Functions. Karim attained his BS at Dhaka University, Dhaka, Bangladesh, and earned his M. Sc. and Ph. D. at Concordia University, Montreal, Canada. He has received multiple grants from NFS for undergraduate education and research. He was the director of Summer Sophomore Mathematics Program (2010- 2014) and is currently serving as the director of Calculus Enrichment Program (2015-2019). Karim mentored multiple students in the REU (Research Experience for Undergraduate) program.

Rajan Lamichhane, Ph.D.

Rajan Lamichhane attained his Ph.D. from Old Dominion University, Norfolk, VA in 2013. Before that, he received his BS degree from Tribhuvan University, Kathmandu, Nepal. Lamichhane has been working as an Assistant Professor at Texas A&M University-Kingsville since September 2013, where he teaches both undergraduate and graduate level statistics courses. His research areas are applied statistics - mainly on the study of economic impact in health outcomes such as obesity and poor sleep - sampling, and time series. The department of mathematics at Texas A&M University-Kingsville offers both undergraduate and graduate degrees in statistics.

Mario Nakazawa, Ph.D.

Mario Nakazawa is an Associate Professor and Chair of the Computer Science program at Berea College. He teaches a wide variety of courses, ranging in topics from Theory Computation to Parallel and Distributed Computing and levels from introductory to advanced senior level. He conducts some research during the summer and during the academic year, but his primary focus is on teaching. Nakazawa recently become interested in bioinformatics after attending a (continued on the next page...)

Next Generation Sequencing Workshop in 2013, and taught a special topics bioinformatics course in 2015 with two chemistry/computer science double majors. One of these students graduated and went on to pursue a PhD in Bioinformatics and Computational Biology. All Berea College students receive a 4 year tuition scholarship, must demonstrate financial need to be admitted, and a majority are first in their family to attend college.

Ann Podleski, Ph.D.

Ann Podleski is a Professor of Mathematics at Harris-Stowe State University, an HBCU in St. Louis, Missouri. In recent years, Harris-Stowe has increased its focus on STEM education by adding degree programs in mathematics and biology, and in 2013 ranked #1 among universities in Missouri in degree production for African-Americans in mathematics. Harris-Stowe has received several NSF grants to boost retention, success, and graduation of students underrepresented in STEM fields. As one of the key faculty involved in this effort, Dr. Podleski has served as a mentor and undergraduate research advisor to STEM students and helped design a summer math and science academy for incoming freshmen interested in majoring in STEM fields. She received her Ph.D. in mathematics from Washington University and prior to serving on the faculty at Harris-Stowe, she worked as a statistical data analyst in the Division of Health Care Research at Washington University School of Medicine. She has worked as a Math Alliance pre-doctoral mentor and served on the Planning Committee for StatFest 2015, an ongoing initiative of the American Statistical Association through its Committee on Minorities in Statistics, and served as facilitator for session entitled “How can we as faculty and professionals recruit, support, and retain underrepresented students in the field of statistics, including successful preparation for careers and/or graduate school and providing the necessary support for completion of graduate degrees?”

Amanda Price, Ph.D.

Amanda Price is an Assistant Professor in the Department of Exercise Physiology, within the School of Health Sciences, at Winston-Salem State University (WSSU). WSSU is a public institution in the University of North Carolina System located in Winston-Salem, NC, and is designated as a Historically Black College/University. Dr. Price earned her PhD in Exercise Physiology with an outside concentration in Statistics from the University of Miami in 2013. Alongside her faculty position at WSSU, she is affiliated with Wake Forest School of Medicine as an Adjunct Assistant Professor in the Translational Science Institute, and is an Affiliated Research Scientist with Gramercy Research Group, an independent research firm conducting community based participatory research. Her research is centered on obesity and chronic disease prevention through healthy lifestyle behavior promotion for the elimination of health disparities. She is currently intervening on the health behaviors of minority college students and is conducting research to examine the barriers to and facilitators for the adoption of healthy behaviors on college campuses to inform policy changes for improving the supports for physical activity, healthy eating, and other health behaviors related to reducing chronic disease risk factors. Dr. Price teaches two senior undergraduate capstone courses: ”Etiology, Risk Factors, and Prevention Strategies of Chronic Diseases" and "Applied Research." One of her personal missions is exposing her students, who are predominately African-American and female, to research as undergraduates and preparing them to pursue graduate careers in the biomedical sciences.

PIPELINES INTO **BIOSTATISTICS**

Faculty Workshop

Wednesday, July 20th
Harvard T.H. Chan School of Public Health - Building 2, Room 426

11:15 - 11:30am **Arrival**: Pick up your visitor's pass in the lobby of 655 Huntington Ave, Boston, MA. You will be directed to the Department of Biostatistics (Building 2, 4th floor).

Session I - Opening Remarks and Introductions

11:30 - 12:30pm *Welcome*
Rebecca Betensky, Professor of Biostatistics and Principal Investigator, Harvard T.H. Chan School of Public Health

Visiting Faculty Introductions
Joseph Bak, Associate Professor and Assistant Chair of Mathematics, City College of New York
Mohammed Karim, Professor of Mathematics, Alabama A&M University
Rajan Lamichhane, Assistant Professor of Mathematics, Texas A&M University - Kingsville
Mario Nakazawa, Associate Professor and Chair of Computer Science, Berea College
Ann Podleski, Professor of Mathematics, Harris-Stowe State University
Amanda Price, Assistant Professor in the Department of Exercise Physiology and Adjunct Assistant Professor in the Translational Science Institute, Winston-Salem State University

12:30 - 1:00pm *Lunch and Discussion*

Session II - Admissions Overview and Course Requirements

1:00 – 2:35pm *Admission to the Biostatistics Doctoral and Master's Programs*
David Wypij, Senior Lecturer in Biostatistics and Director of Master of Science Programs, Harvard T.H. Chan School of Public Health
Paige Williams, Senior Lecturer on Biostatistics and Director of Graduate Programs, Harvard T.H. Chan School of Public Health

Required Courses and Qualifying Exams
Brent Coull, Professor of Biostatistics and Associate Chair of the Department of Biostatistics, Harvard T.H. Chan School of Public Health
Rebecca Betensky, Professor of Biostatistics and Principal Investigator, Harvard T.H. Chan School of Public Health

2:35 – 2:50pm *Break and Refreshments*

PIPELINES INTO **BIOSTATISTICS**

Faculty Workshop

Wednesday, July 20th
Harvard T.H. Chan School of Public Health - Building 2, Room 426

Session III - What is Biostatistics, and Why Should Math and Quantitative Majors Consider It?

2:50 – 4:05pm

JP Onnela, Assistant Professor of Biostatistics, Harvard T.H. Chan School of Public Health
Sherri Rose, Associate Professor, Department of Health Care Policy, Harvard Medical School
Sarah Anoke, PhD Candidate in Biostatistics, Harvard T.H. Chan School of Public Health
Rebecca Betensky, Professor of Biostatistics and Principal Investigator, Harvard T.H. Chan School of Public Health

Session IV - Wrap Up

4:05 – 4:30pm *Discussion*

Session V - Visiting Faculty Dinner (Kresge 110)

6:00pm

Attendees
Sarah Anoke, PhD Candidate in Biostatistics and Summer Program Alumna, Harvard T.H. Chan School of Public Health
Joseph Bak, Associate Professor and Assistant Chair of Mathematics, City College of New York
Rebecca Betensky, Professor of Biostatistics and Principal Investigator, Harvard T.H. Chan School of Public Health
Jessica Boyle, Senior Diversity Coordinator for Biostatistics, Harvard T.H. Chan School of Public Health
Mohammed Karim, Professor of Mathematics, Alabama A&M University
Rajan Lamichhane, Assistant Professor of Mathematics, Texas A&M University - Kingsville
Mario Nakazawa, Associate Professor and Chair of Computer Science, Berea College
Ann Podleski, Professor of Mathematics, Harris-Stowe State University
Amanda Price, Assistant Professor in the Department of Exercise Physiology and Adjunct Assistant Professor in the Translational Science Institute, Winston-Salem State University
Sherri Rose, Associate Professor, Department of Health Care Policy, Harvard Medical School
Sheila Thomas, Assistant Dean for Diversity and Minority Affairs, Harvard Graduate School of Arts and Sciences
Kim Truong, Director of Inclusion Programs, Harvard T.H. Chan School of Public Health Adjunct Lecturer on Education, Harvard Graduate School of Education
Michelle Williams, Dean of the Faculty, Harvard T.H. Chan School of Public Health
David Wypij, Director of Master of Science Programs and Senior Lecturer in Biostatistics, Harvard T.H. Chan School of Public Health

Speaker
"Three Sides of the Same Coin: Teaching, Research, and Learning"
Xiao-Li Meng, Dean of the Graduate School of Arts and Sciences, Whipple V. N. Jones Professor of Statistics, Harvard University

PIPELINES INTO **BIOSTATISTICS**

Annual Symposium

Thursday, July 21st
Dana-Farber Cancer Institute - Yawkey Building, Room 306/307

8:30 - 9:00am *Registration & Breakfast*

Session I - Opening Remarks and Introductions

9:00 - 9:20am **Rebecca Betensky**
Professor of Biostatistics and Principal Investigator,
Harvard T.H. Chan School of Public Health

Meredith Rosenthal
Associate Dean for Diversity and Professor of Health Economics and Policy,
Harvard T.H. Chan School of Public Health

Xihong Lin
Henry Pickering Walcott Professor of Biostatistics and Chair of the Department of Biostatistics, Harvard T.H. Chan School of Public Health

Session II – Keynote Speaker

9:20 - 10:20am *Biostatistics: Paving the Way in the Big Data Era*
DuBois Bowman, Professor of Biostatistics and Chairman of the Department of Biostatistics, Mailman School of Public Health, Columbia University

Session III – Summer Program Research Project Presentations

10:25 - 10:45am *Changes in Health-Related Quality of Life after Bone Marrow Transplantation for Severe Sickle Cell Disease*
Thabat Dahdoul, California State University – Fullerton '17
Rebekah Loving, University of Hawaii – Hilo '19
Marcus Spearman, Johns Hopkins University '17

Faculty Mentor: **Donna Neuberg**, Senior Lecturer on Biostatistics, Dana-Farber Cancer Institute and Harvard T.H. Chan School of Public Health
Postdoc Mentor: **Kristen Stevenson**, Dana-Farber Cancer Institute

10:50 - 11:10am ***Break & Refreshments***

11:10 - 11:30am *Controversy in Pharmacogenomics*
Alejandra DeJesús-Soto, University of Puerto Rico – Cayey '17
Mark Ruprecht, University of Minnesota – Twin Cities '18
Patricia Vera-González, University of Puerto Rico – Río Piedras '17

Faculty Mentor: **Rafa Irizarry**, Professor of Biostatistics, Dana-Farber Cancer Institute and Harvard T.H. Chan School of Public Health
Graduate Mentor: **Will Townes**, Harvard T.H. Chan School of Public Health

PIPELINES INTO **BIOSTATISTICS**

Annual Symposium

Thursday, July 21st
Dana-Farber Cancer Institute - Yawkey Building, Room 306/307

11:35 - 11:55am

Design Considerations for Two-Phase Studies in Cluster-Correlated Settings, with Application to Anti-Retroviral Treatment Programs in Resource-Limited Settings
Matthew Blake, Boston College '16
Maria Fernandes, UMass Amherst '17
Deja Washington, Xavier University of Louisiana '17

Faculty Mentor: **Sebastien Haneuse**, Associate Professor of Biostatistics, Harvard T.H. Chan School of Public Health
Postdoc Mentor: **Claudia Rivera**, Harvard T.H. Chan School of Public Health

12:00 - 12:20pm

The Politics of Power Plants: Is Congressional Voting Associated with Pollution Emissions?
Janelle Walker, Medgar Evers College '16
Joseph Zoller, Carnegie Mellon University '18

Faculty Mentor: **Cory Zigler**, Assistant Professor of Biostatistics, Harvard T.H. Chan School of Public Health
Postdoc Mentor: **Chanmin Kim**, Harvard T.H. Chan School of Public Health

12:25 - 12:45pm

Predicting Diabetes Diagnosis in African Americans Using Ensemble Machine Learning
Kimberlyn Bailey, Le Moyne College/SUNY Owsego '16
Jarvis Miller, Rice University '16
Valerie Santiago González, University of Puerto Rico – Río Piedras '17

Faculty Mentor: **Sherri Rose**, Associate Professor, Department of Health Care Policy, Harvard Medical School
Graduate Mentor: **Savannah Bergquist**, Harvard University

Session IV – Summer Program Alumni Panel: Conversation Over Lunch

12:50 - 2:00pm

Networking Lunch
Please take a moment to visit project posters of our recent alumni!

2:00 - 2:45pm

Journeys in Biostatistics After the Summer Program
Scarlett Bellamy, Professor of Biostatistics in Biostatistics and Epidemiology at HUP
Quincy Greene, The Center for Education and Public Initiatives (CEPI), College of Physicians of Philadelphia
Rebecca Hubbard, Associate Professor of Biostatistics, University of Pennsylvania School of Medicine
DeJuran Richardson, Professor of Mathematics and Computer Science, Lake Forest College
Jennifer Smith, Epidemiologist, United States Public Health Service

PIPELINES INTO **BIOSTATISTICS**

Annual Symposium

Thursday, July 21st
Dana-Farber Cancer Institute - Yawkey Building, Room 306/307

Session V – Post-Baccalaureate Research Project Presentations

2:50 - 3:10pm
Binary Instrumental Variable Model For Causal Inference
Jimmy Nguyen, Post-Baccalaureate Program Participant

Faculty Mentor: **Eric Tchetgen Tchetgen**, Professor of Biostatistics and Epidemiologic Methods, Harvard T.H. Chan School of Public Health

3:15 - 3:35pm
Prenatal Metal Exposures and Birthweight in Mexico City
Marcia Higgins, Post-Baccalaureate Program Participant

Faculty Mentor: **Brent Coull**, Professor of Biostatistics and Associate Chair of the Department of Biostatistics, Harvard T.H. Chan School of Public Health

3:40 - 3:55pm
Closing Remarks
Rebecca Betensky
Professor of Biostatistics and Principal Investigator,
Harvard T.H. Chan School of Public Health

PIPELINES INTO **BIOSTATISTICS**

Faculty Workshop

Friday, July 22nd
Harvard T.H Chan School of Public Health - Kresge 204

Session I – HSPH Student Presentations and Discussion

9:15 - 10:45am *Graduate Students' Journeys to and Experiences in Biostatistics at HSPH*
Esther Fevrier, Master's Student
Gino Lerebours, PhD Candidate
Heather Mattie, PhD Candidate
Kamrine Poels, PhD Candidate
Octavious Talbot, PhD Candidate
Christine Ulysse, Master's Student

Session II – Wrap Up

10:45 - 10:55am Closing Remarks

11:00 - 11:40am Program Evaluations

11:45 - 1:00pm **Lunch** (Building 2, Room 426 -- optional)
Help celebrate the completion of the Summer Program with our 14 participants

Alumni Poster Abstracts

Comparison of Substitution Models in the Phylogenetic Inference of Retroviruses

Cassandra Burdziak, Shamyla Din, Dr. Siobain Duffy (PI), Amy Patel, Dr. Yee Mey Seah
Rutgers University

There have been numerous studies focusing on how substitution models can be used to study evolutionary relationships between fast-mutating viruses, yet there is little work presently on how the use of particular nucleotide substitution models can improve the study of molecular evolution in retro-transcribing viruses. We tested whether the unrestricted non-time reversible (UNR) model, which allows forward and reverse substitutions between the same bases to occur at different rates, would improve fit of the aligned sequence data to phylogenies inferred using the simpler general time reversible (GTR) model, which forces forward and reverse substitutions to occur at equivalent rates. This is especially important for retroviruses, which are particularly susceptible to substitution biases caused by their hosts' anti-viral deaminating enzymes, such as APOBEC3G. Results showed that there were significant substitution biases for all seven retro-transcribing viruses examined in this study, and that the relative quality of UNR was generally better than GTR according to Akaike Information Criterion scores. With the more stringent Bayesian Information Criterion, UNR was not of better quality than GTR. One of the long-term goals of this study is to demonstrate how improved molecular evolutionary models can impact epidemiological studies of retroviruses. Future research will involve similar analyses of other retro-transcribing viruses as well as different computational approaches to comparing the two models.

Evaluation of Pre-Analytical Variability in Circulating Cell-Free DNA Using Digital PCR and Molecularly-Tagged Sequencing

Havell Markus[1], Tania Contente-Cuomo[1], and Muhammed Murtaza[1,2]
[1]Center for Noninvasive Diagnostics, Translational Genomics Research Institute, Phoenix, AZ
[2]Mayo Clinic, Scottsdale, AZ

Circulating cell-free DNA (cfDNA) analysis holds promise for novel diagnostics in cancer medicine. However, little is understood about the effect of pre-analytical factors on DNA quality and on downstream applications. We compared 3 different blood collection protocols using paired plasma samples from 22 healthy volunteers (EDTA tubes processed within 1 hour, Cell-free DNA BCT tubes at ambient temperature processed within 24 hours and 72 hours) and evaluated differences in cfDNA yield, quality and integrity. Using an in-house multiplexed droplet digital PCR assay, we found no significant difference in cfDNA yield or integrity across blood collection protocols. To assess whether cell-stabilizing preservative in specialty tubes may induce low-abundance noise in cfDNA, we performed molecularly-tagged targeted deep sequencing and developed an informatics approach for enumeration and variant calling from uniquely tagged DNA fragments. Sequencing results showed no significant evidence of preservative-induced cfDNA damage across tested blood collection protocols. Our results suggest that plasma DNA obtained up to 3 days following collection in Cell-free DNA BCT tubes may be used for downstream sequencing in patients with cancer.

PIPELINES INTO **BIOSTATISTICS**

With Special Thanks...

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Rebecca Betensky, Harvard Chan School

Symposium and Summer Program Coordinator
Jessica Boyle, Harvard Chan School

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Shaina Andelman, Harvard Chan School
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Research Mentors
Savannah Bergquist, Harvard University
Sebastien Haneuse, Harvard Chan School
Rafael Irizarry, Harvard Chan School
Chanmin Kim, Harvard Chan School
Donna Neuberg, DFCI & Harvard Chan School
Claudia Rivera, Harvard Chan School
Sherri Rose, Harvard Medical School
Kristen Stevenson, Dana-Farber Cancer Institute
Will Townes, Harvard Chan School
Cory Zigler, Harvard Chan School

Visiting Faculty Workshop Speakers
Brent Coull, Harvard Chan School
Xiao-Li Meng, Harvard University
JP Onnela, Harvard Chan School
Sherri Rose, Harvard Chan School
Paige Williams, Harvard Chan School
David Wypij, Harvard Chan School

Course Instructors
Sarah Anoke '11, Harvard Chan School
Heather Mattie, Harvard Chan School
Olivia Orta, Harvard Chan School
Sarah Peskoe, Harvard Chan School
Xue Zou, Harvard Chan School

Seminar Series Speakers
Sebastien Haneuse, Harvard Chan School
Shirley Liu, DFCI & Harvard Chan School
Marcello Pagano, Harvard Chan School
Giovanni Parmigiani, DFCI & Harvard Chan School
John Quackenbush, DFCI & Harvard Chan School
Eric Tchetgen Tchetgen '99, Harvard Chan School
GC Yuan, DFCI & Harvard Chan School

Graduate/Social Mentors
Esther Fevrier, Harvard Chan School
Gino Lerebours, Harvard Chan School
Kamrine Poels, Harvard Chan School
Octavious Talbot, Harvard Chan School

Professional Development Workshop Speakers
Dustin Gee, Assistant Director of Employee Relations
Monik Jimenez, Instructor in Medicine
Cesar Mieses, Assistant Director of HR/Recruitment Services
Felisa Nobles, Harvard Chan Office of Diversity & Inclusion
Kerri Noonan, Harvard Chan Admissions Office

Alumni Participants (with Program Year)
Rolando Acosta '15, University of Puerto Rico - Humacao
Willi Artman '15, University of Rochester
Saikima Bond '95, Senior Analyst, UTC Carrier
Julie Jackson Brown '95, Keiser/Grand Canyon Universities
Cassandra Burdziak '15, Weill Cornell/Cornell University
Wen-kuni Ceant '12, Drexel University
Jake Conway '14, Harvard Medical School
Quincy Greene '06, University of Pennsylvania
Rebecca Hubbard '99, University of Pennsylvania
Havell Markus '14, Arizona State University
Sando Ojukwu '08, Children's Hospital of Philadelphia
Jennifer Osei '15, Cornell University
Jennifer C. Smith '00, Center for Disease Control
Erika Rhett '99, Claflin University
Morjoriee White '05, U.S. Department of Veterans Affairs

Post-Baccalaureate Internship Sponsors
Center for Communicable Disease Dynamics
Harvard T.H. Chan School of Public Health

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Harvard Chan Department of Biostatistics
Harvard Chan Office of Diversity and Inclusion

General Information

Wireless Internet Access
To start, connect to the **"phsphiaguest"** network, then open a web browser and click "accept."

Taxi Services
Boston Cab: (617)536-5010
Metro Cab: (617)782-5500

Contact Information
biostat_diversity@hsph.harvard.edu

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Notes