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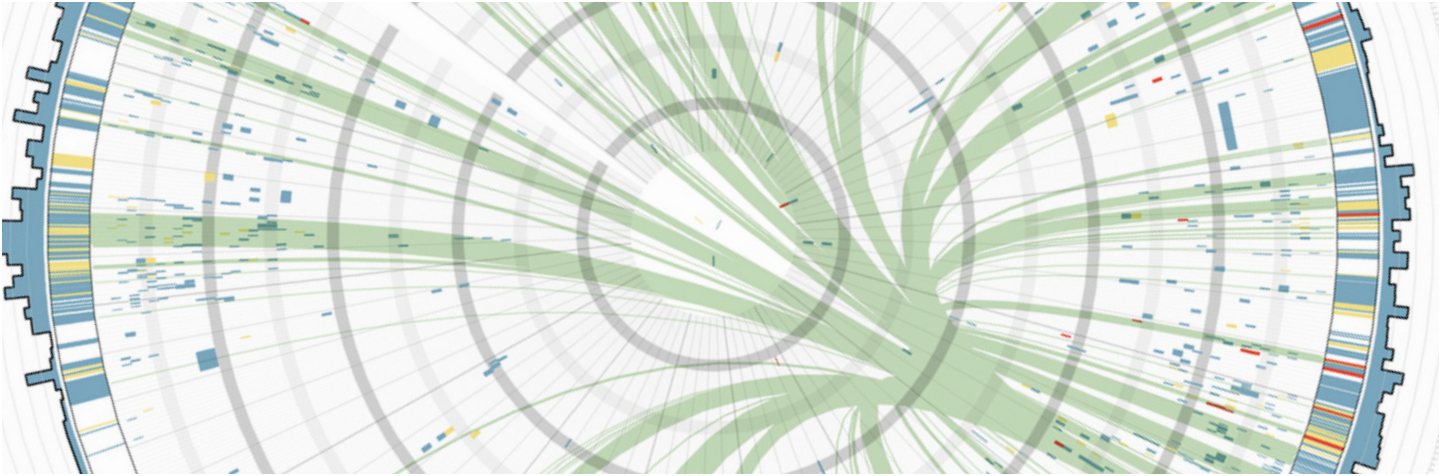Department of Biostatistics

PIPELINES INTO
BIOSTATISTICS

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

Visiting Faculty Workshop | July 19-21, 2017
Annual Symposium | Thursday, July 20, 2017

#HarvardSPB

PIPELINES INTO BIOSTATISTICS

Introduction

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. Marcello Pagano is the current 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 component of 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 five 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 encourage their undergraduate students to explore 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.

Keynote Speaker

Knashawn Morales, Sc.D.

Associate Professor of Biostatistics
Departments of Biostatistics and Epidemiology
University of Pennsylvania

Latent Variable Models: Applications in aging and obesity prevention studies

Longitudinal studies, common in public health and medical research, are intended to provide information on changes in health or disease states across time. The analysis of longitudinal data can be complicated by a hypothesis of multiple disease processes over time or if there are multiple measures used to quantify the same disease process. Standard modeling approaches make some simplifying assumptions. The most common are to: (1) assume a single disease process; or (2) summarize, combine, or collapse multiple measures so they fit into a traditional longitudinal analysis framework. In both settings, potentially important information about the progression of the disease process is ignored. Latent variable modeling provides a flexible framework to accommodate the complexities of the data and simultaneously utilize all available information.

In this presentation, an introduction to latent variable methods will be provided by way of three examples: 1) examining the stability of preferences for life-sustaining treatment in older adults; 2) examining the course of depression in late life; and 3) exploring weight loss patterns during an obesity prevention study. In addition, Dr. Morales will also share her personal background and career experience.

Knashawn Morales, Sc.D. is Associate Professor of Biostatistics at the Perelman School of Medicine at the University of Pennsylvania. Dr. Morales joined the faculty in 2006 after completing three years in the Center for Clinical Epidemiology and Biostatistics as an Instructor. Her methodological research interests include latent variable models, categorical data analysis, and longitudinal data analysis. Dr. Morales has extensive collaborative experience in the area of mental health services and clinical trials research. In addition, she has participated in studies involving behavioral modification interventions for asthma, weight management, insomnia and HIV/STD risk reduction. Dr. Morales is the Co-PI of the Mental Health Training Grant in Biostatistics and Co-Director of the Penn Mental Health and AIDS Research Center, Biostatistics and Data Management Core.

Visiting Faculty Bios

Alberta Arviso, Ph.D.

Dr. Alberta Arviso is currently working as a Learning Specialist with the Arizona Indians Into Medicine (Az INMED) program in the Office of Diversity and Inclusion in the Arizona Health Sciences (AHS) at the University of Arizona in Tucson, Arizona. The goal of AzINMED is to develop collaborative partnerships with Tribal Nations, K-12 districts, community-tribal colleges, universities and health professional schools to recruit, support, and encourage Native American students to enter and succeed in the health professions at the AHS located in Tucson and Phoenix, Arizona. Dr. Arviso obtained her doctoral degree in clinical psychology from the Department of Psychology at Washington State University in Pullman, Washington and her post-doctoral degree in school psychology from the University of Arizona. Dr. Arviso currently teaches, mentors, and provides support to Native American students who are in the pre-health or health professions programs. She is actively involved in beginning a pipeline for Native American and Hispanic students who want to earn degrees in agricultural and veterinary medicine. Dr. Arviso is a skilled psychologist with vast experience in hospital and school-based programs. Her theses and dissertation have been in post-traumatic stress with Native American Viet Nam veterans and fetal alcohol syndrome impacting learning among Native American children. Dr. Arviso is a dedicated therapist, instructor, and researcher who has an on-going goal of being of service, especially to underrepresented and underserved minorities.

Cher Crockett, Ph.D.

Dr. Cher C. Crockett received her Doctorate of Philosophy at Southern University A & M College in Baton Rouge, Louisiana with an emphasis in the Impact of Technology on Mathematics Education. In addition to her doctorate, she also has a Bachelor of Science in Mathematics, a Master of Science in Mathematics, and a Masters of Education in Secondary Mathematics Education. She is currently a Visiting Professor in the Mathematics Department at Texas Southern University, and teaches undergraduate mathematics course that have included Fundamental Mathematics, College Algebra, Trigonometry, Pre-Calculus, Mathematics for Business, Economics and Social Sciences I & II (Business Calculus), Geometry for Teachers and Elementary Statistics. Her current research interests include student perception of effective learning environments and factors that influence student preparedness for college mathematics.

By design, Dr. Crockett taught at the elementary, middle and high school levels, worked in both urban and suburban schools, and taught at-risk, regular education and honor students in an effort to become familiar with the pedagogy of how all students learn, the best approaches to delivering instruction, and the factors that attribute to the disparity at which students of difference races and socioeconomic statuses learned. She has devoted her entire career working in education with the hopes of becoming an effective professor who will make a difference in the lives of students who were once like her- did not have a dream as a child of what she wanted to be and were not aware of the limitless possibilities of what she could become.

PIPELINES INTO BIOSTATISTICS

Throughout her teaching career, Dr. Crockett has been constantly asked by her students about the relevancy of Mathematics in the real world, so much so that it became obvious to her that students saw Mathematics as a means to an end instead of seeing it as the beauty it is. As a result, she created an ever evolving list of the many ways Mathematics impacts our daily lives and developed a teaching philosophy premised on utilizing fun and creative approaches to present engaging lessons that are interesting to her

Alfreda Holloway-Beth, Ph.D.

Dr. Alfreda Holloway-Beth joined Chicago State University's Department of Health Studies as a tenured-track Assistant Professor in Fall 2014.   Her research focuses on injury epidemiology from large administrative data, with an emphasis on data linkage, research methodology, and assessing legal intervention. She also focuses on health risk of immigrant work cohorts using quantitative and qualitative occupational epidemiologic research methods. Dr. Holloway-Beth received a Bachelor's of Arts from Washington University in St. Louis, a Masters of Science in Epidemiology and PhD in Environmental and Occupational Health Sciences from the University of Illinois at Chicago School of Public Health.   She teaches Epidemiology, Environmental Health Sciences, and Research Methods in both the undergraduate and graduate programs.

Salam Khan, Ph.D.

Dr. Salam Khan is Assistant Professor of Mathematics at Alabama A&M University. Prior to coming Alabama A&M University, Dr. Khan was a post-doctoral fellow at Florida State University for three years. He graduated from the University of Electro Communications in Tokyo with a Ph.D. in applied mathematics. His primary research interests are Mathematical and Statistical Modeling, Applied Statistics, Probability Theory, Approximation Theory, Complex Systems Modeling, Mathematical Sociology, Mathematical Biology, and Dynamical Systems. Dr. Khan currently supervises Ph.D. students at Alabama A&M University.

Bhikhari Tharu, Ph.D.

Dr. Bhikhari Tharu's primary duty is to teach Biostatistics, General Statistics, Statistics and Probability and mathematical courses to undergraduate students at Spelman College. He works with students to complete semester projects in analyzing real world data that is based on the information they receive in class. He also mentors students in research in health and environmental data with statistical analysis. Dr. Tharu works on statistical modeling of health and environmental data. He is also interested in Bayesian Statistical modeling and longitudinal analysis.

PIPELINES INTO BIOSTATISTICS

Faculty Workshop

Wednesday, July 19th
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 the FXB Building at 651 Huntington Avenue. You will be directed to the Department of Biostatistics (Building 2, 4th floor).

Session I - Opening Remarks and Introductions

11:30 - 12:00pm	*Welcome*
	Marcello Pagano ,Professor of Statistical Computing and Director of the Summer Program in Biostatistics and Computational Biology, Harvard T.H. Chan School of Public Health
	Visiting Faculty Introductions
	Alberta Arviso, Learning Specialist, University of Arizona
	Cher Crockett, Visiting Professor of Mathematics, Texas Southern University
	Alfreda Holloway-Beth, Associate Professor and Environmental and Occupational Health Scientist, Chicago State University
	Salam Khan, Assistant Professor of Mathematics, Alabama A&M University
	Bhikhari Tharu, Assistant Professor of Mathematics, Spelman College
12:00 - 1:00pm	*Lunch and Discussion*

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

1:00 – 2:30pm	**John Quackenbush**, Professor of Computational Biology and Bioinformatics, Harvard T.H. Chan School of Public Health
	Marcello Pagano, Professor of Statistical Computing and Director of the Summer Program in Biostatistics and Computational Biology, Harvard T.H. Chan School of Public Health
	Sarah Anoke, Postdoctoral Fellow, Harvard T.H. Chan School of Public Health
	Heather Mattie, Instructor of Biostatistics, Harvard T.H. Chan School of Public Health

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Session III - Admissions Overview and Course Requirements

2:30 – 3:45pm   *Admission to the Biostatistics Doctoral and Master's Programs*

Paige Williams, Senior Lecturer on Biostatistics and Director of Graduate Programs, Harvard T.H. Chan School of Public Health
David Wypij, Senior Lecturer in Biostatistics and Director of Master of Science 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
Marcello Pagano, Professor of Statistical Computing and Director of the Summer Program in Biostatistics and Computational Biology, Harvard T.H. Chan School of Public Health
Heather Mattie, Instructor of Biostatistics, Harvard T.H. Chan School of Public Health

Session IV - Summer Student Panel
3:45 – 5:00pm   *Discussion with Current Summer Program Students*

Session V - Visiting Faculty Dinner (Kresge 110)

6:00 – 8:00pm   **Attendees**
Sarah Anoke, Summer Program Alumna, Postdoctoral Fellow, Harvard T.H. Chan School of Public Health
Sheila Gaynor, Graduate Student, Harvard T.H. Chan School of Public Health
Heather Mattie, Instructor in Biostatistics, Harvard T.H. Chan School of Public Health
Marcello Pagano, Professor of Statistical Computing and Director of the Summer Program in Biostatistics and Computational Biology, Harvard T.H. Chan School of Public Health
Kamrine Poels, Graduate Student, Harvard T.H. Chan School of Public Health
Megan Scott, Program Coordinator for Summer Program in Biostatistics and Computational Biology, Harvard T.H. Chan School of Public Health
Eric Tchetgen Tchetgen, Professor of Biostatistics and Epidemiological Methods
Jai Vartikar,Program Coordinator for Summer Program in Biostatistics and Computational Biology, Harvard T.H. Chan School of Public Health
Jaffer Zaidi, Graduate Student, Harvard T.H. Chan School of Public Health

PIPELINES INTO BIOSTATISTICS

Visiting Faculty
Alberta Arviso, Learning Specialist, University of Arizona
Cher Crockett, Visiting Professor of Mathematics, Texas Southern University
Alfreda Holloway-Beth, Associate Professor and Environmental and Occupational Health Scientist, Chicago State University
Salam Khan, Assistant Professor of Mathematics, Alabama A&M University
Bhikhari Tharu, Assistant Professor of Mathematics, Spelman College

Speaker
"Modularizing, Magnetizing, and Multilayering -- Towards more effective science general education"
Xiao-Li Meng, Dean of the Graduate School of Arts and Sciences
Whipple V. N. Jones Professor of Statistics, Harvard University

Annual Symposium

Thursday, July 20th
Dana-Farber Cancer Institute - Smith Building, Room 308/309

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

Session I - Opening Remarks and Introductions
9:00 - 9:25am   **Marcello Pagano**
Professor of Statistical Computing and Principal Investigator
Harvard T.H. Chan School of Public Health

Betty Johnson
Assistant Dean for Faculty and Staff Diversity, Development and Leadership
Harvard T.H. Chan School of Public Health

Eric Tchetgen Tchetgen
Professor of Biostatistics and Epidemiological Methods
Harvard T.H. Chan School of Public Health

Session II – Keynote Speaker
9:25 - 10:25am   *Latent Variable Models: Applications in Aging and Obesity Prevention Studies*
Knashawn H. Morales
Associate Professor of Biostatistics in Biostatistics and Epidemiology at the Hospital of
the University of Pennsylvania

Session III – Summer Program Research Project Presentations
10:25 - 10:45am   *Controversy in Pharmacogenomics*
Jace Gilbert, University of Nevada, Reno '17
Jeff Joseph, Bowdoin College '19
Daniel Meza, Monterey Bay State University '17

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

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

11:10 - 11:30am   *Changes in Health-Related Quality of Life after Bone Marrow Transplantation for
Severe Sickle Cell Disease*
Danielle Baldwin, Hampton University '17
Reibin Hiraldo, Salem State University '17
Silvio Martinez, University of Florida '19

Faculty Mentor: **Jukka-Pekka Onnela,** Associate Professor of Biostatistics,
Harvard T.H. Chan School of Public Health
Postdoc Mentor: **Patrick Staples,** Harvard T.H. Chan School of Public Health

PIPELINES INTO BIOSTATISTICS

Annual Symposium

Thursday, July 20th
Dana-Farber Cancer Institute - Smith Building, Room 308/309

11:35 - 11:55am
Estimating and Understanding Gene Regulatory Networks
Andrea Ovalle, Smith College '18
Ula Widocki, The College of New Jersey '18

Faculty Mentor: **John Quackenbush,** Professor of Computational Biology and Bioinformatics, Harvard T.H. Chan School of Public Health
Postdoc Mentor: **John Platig,** Harvard University, Dana Farber Cancer Institute

12:00 - 12:20pm
Tracking air pollution from power plants: Mapping regulations to populations
David Angeles, California State University, Northridge '18
Alexandra Carruthers Ferrero, University of Puerto Rico – Río Piedras '18
Jovaniel Rodriguez Maldonado, University of Puerto Rico – Río Piedras '19

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
Machine Learning for Health Outcomes Prediction
Alicia Dominguez, University of New Mexico '17
Julia Thome, Cornell College '18
Tyler Vu, California State University, Fullerton '18

Faculty Mentor: **Sherri Rose**, Associate Professor, Department of Health Care Policy, Harvard Medical School
Graduate Student 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
Wen-kuni Ceant, Fulbright Scholar, Drexel University Dornsife School of Public Health
Jeff Gardner, President & Principal Consultant, DataPharm Statistical & Data Management Services
Portia Parker, SAS Analytical Tester
DeJuran Richardson, Professor of Mathematics and Computer Science, Lake Forest College
Ronnie Sebro, Assistant Professor of Radiology Musculoskeletal Imaging, Department of Radiology, University of Pennsylvania
Marcia Tan, Postdoctoral Fellow in Cancer Prevention and Control, Northwestern University

PIPELINES INTO BIOSTATISTICS

Annual Symposium

Thursday, July 20th
Dana-Farber Cancer Institute - Smith Building, Room 308/309

Session V – Post-Baccalaureate Research Project Presentations

2:50 - 3:10pm   *Viral Genetic Clustering by Poverty and Site in Black MSM*
Julia Kobe, Wentworth Institute of Technology '17
Post-Baccalaureate Program Participant

Faculty Mentor: **Victor De Gruttola,** Professor of Biostatistics, Harvard T.H. Chan School of Public Health
Graduate Student Mentor: **Kamrine Poels,** Harvard T.H. Chan School of Public Health

3:15 - 3:35pm   *The Impact of Air Pollution on Maternal Blood Pressure in the VIVA Cohort*
Christina Howe, Simmons College '17
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
Graduate Student Mentor: **Kamrine Poels**, Harvard T.H. Chan School of Public Health

3:40 - 3:55pm   *Closing Remarks*
Marcello Pagano
Professor of Statistical Computing and Principal Investigator
Harvard T.H. Chan School of Public Health

PIPELINES INTO BIOSTATISTICS

Faculty Workshop

Friday, July 21st
Harvard T.H Chan School of Public Health - Building 2, Room 426

Session I – HSPH Student Presentations and Discussion
9:30 - 10:30am   *Graduate Students' Journeys to and Experiences in Biostatistics at HSPH*
Sarah Anoke, recent graduate
Kaitlin Cook, Ph.D. Student
Shirley Liao, Ph.D. Student
Heather Mattie, recent graduate
Emily Slade, Ph.D. Student
Sam Tracy, Ph.D. Student
Jaffer Zaidi, Ph.D. Student

Session II – Wrap Up
10:30 - 11:00am   Closing Remarks

11:00 - 12:00pm   Program Evaluations

1:00 - 2:00pm   **Lunch** (Building 2, Room 426 -- optional)
Help celebrate the completion of the Summer Program with our 16 participants

PIPELINES INTO BIOSTATISTICS

With Special Thanks...

Principal Investigator
Marcello Pagano, Harvard Chan School

Symposium and Summer Program Coordinators
Megan Scott, Harvard Chan School
Jai Vartikar, Harvard Chan School

Course Instructors
Sarah Anoke '11, Harvard Chan School
Shirley Liao, Harvard Chan School
Heather Mattie, Harvard Chan School

Research Mentors
Savannah Bergquist, Harvard University
Brent Coull, Harvard Chan School
Victor De Gruttola, Harvard Chan School
Sheila Gaynor, Harvard Chan School
Rafael Irizarry, Harvard Chan School
Chanmin Kim, Harvard Chan School
Jukka-Pekka Onnela, Harvard Chan School
John Platig, Harvard Chan School
Kamrine Poels '15, Harvard Chan School
John Quackenbush, Harvard Chan School
Sherri Rose, Harvard Medical School
Patrick Staples, Harvard Chan School
Cory Zigler, Harvard Chan School

Visiting Faculty Workshop Speakers
Sarah Anoke '11, Harvard Chan School
Brent Coull, Harvard Chan School
Heather Mattie, Harvard Chan School
Xiao-Li Meng, Harvard University
Marcello Pagano, Harvard Chan School
John Quackenbush, Harvard Chan School
Paige Williams, Harvard Chan School
David Wypij, Harvard Chan School

Professional Development Workshop Speakers
Kristina Gravellese, Human Resources Department
Monik Jimenez, Instructor in Medicine
Amanda King, Harvard Chan School
Nicole Levesque, Harvard Chan School
Carol Martin, Program Manager, Harvard Catalyst
Felisa Nobles, Harvard Chan Office of Diversity & Inclusion
Kerri Noonan, Harvard Chan Admissions Office

Seminar Series Speakers
Martin Aryee, Harvard Chan School & Harvard Medical School
Rebecca Betensky, Harvard Chan School
Julie Buring, Harvard Chan School
Brent Coull, Harvard Chan School
Melody Goodman, New York University
Bethany Hedt-Gauthier, Harvard Chan School
Curtis Huttenhower, Harvard Chan School
Betty Johnson, Harvard Chan School
Xihong Lin, Harvard Chan School
Marcello Pagano, Harvard Chan School
Jerald Schindler, Alnylam Pharmaceuticals & Harvard Chan School
Laura Forsberg White, BU & Harvard Chan School

Administrative and Promotional Support
Shaina Andelman, Harvard Chan School
Valerie Coffee, Harvard Chan School
Amanda King, Harvard Chan School
Nicole Levesque, Harvard Chan School
Susan Luvisi, Harvard Chan School

Alumni Participants (with Program Year)
Kimberlyn Bailey '16, SUNY Oswego & Le Moyne College
Wen-kuni Ceant '12, Drexel University
Thabat Dahdoul'16, California State University,Fullerton
Alejandra De Jesus-Soto '16, Univ of Puerto Rico, Cayey
Jeff Gardner '97, DataPharm SDMS
Marcia Higgins '16, Johnson C. Smith University
Andrea Lane '15, Emory University
Rebekah Loving '16, University of Hawaii at Hilo
Jarvis Miller '16, Rice University
Portia Parker '10, Smith College
Mark Ruprecht '16, University of Minnesota
Ronnie Sebro '98, University of Pennsylvania
Marcia Tan '08, Northwestern University
Janelle Walker '16, CUNY Medgar Evers College
Gary Yu '04, Columbia University

Post-Baccalaureate Internship Sponsors
CHEAR Center for Data Science
Harvard T.H. Chan School of Public Health

PIPELINES INTO BIOSTATISTICS

General Information

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Metro Cab: (617)782-5500

Contact Information
biostat_diversity@hsph.harvard.edu

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Notes