

GENETICS AND DEVELOPMENT DEPARTMENT NEWSLETTER

Academic Year
2016/2017, Issue 1



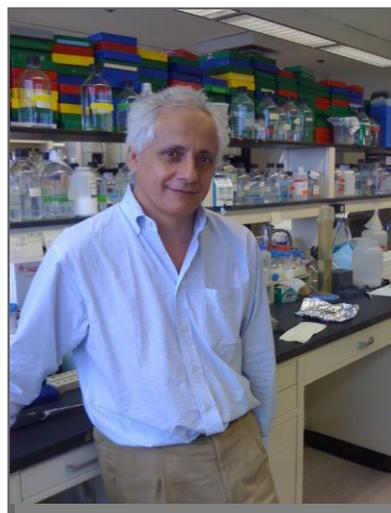
A NOTE FROM OUR CHAIRMAN

We would like to welcome you to our first semi-annual newsletter. In an effort to enhance the visibility of our Genetics and Development Department throughout the CUMC community, we have decided to publish this newsletter. The perception of the Department of Genetics and Development on campus is that it is not visible enough considering the quality of the work performed by its faculty. Even if a back-handed one, it is a nice compliment! To address this discrepancy between who we are, what we do and our presence on campus and still without blowing our own horn, we decided to publish twice a year initially a brief newsletter reporting accomplishments of faculty members, introducing new faculty members and highlighting one research program per issue.

*"Genetics to understand Development,
Physiology, and Pathogenesis of all diseases"*

One of our goals is to show how much the department is changing by constantly recruiting new faculty members and by building bridges with clinical departments, that all recognize the importance of a strong basic science presence on campus. This explains why so many members of the clinical department are affiliated with our department. The Department of Genetics and Development is also a school within this school and under the leadership of Dr. Virginia E. Papaioannou and now Dr. Michael Shen, have developed a remarkable graduate education culture and a superb training grant. At a time when science is under siege in this country, this contribution to the CUMC mission cannot be emphasized enough.

*"Please encourage your lab members to go to
The March for Science this Saturday, April 22nd"*



Gerard Karsenty, MD, PhD
Paul A. Marks Professor and Chair of the
Department of Genetics and Development
Columbia University Medical Center

PROMOTIONS

Congratulations! **Dr. Michele M. Shirasu-Hiza** for being promoted tenured Associate Professor in The Genetics and Development Department.

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OUR NEW FACULTY

The G&D Department is pleased to introduce its two new faculty members

Luke Berchowitz earned his Ph.D. from University of North Carolina at Chapel Hill in 2010 and completed his postdoctoral training at MIT in the lab of Dr. Angelika Amon. The general focus of Luke's scientific training was to understand the developmental processes underlying the formation of haploid cells that are used during fertilization (e.g. sperm and eggs). Luke discovered and characterized a pathway that yeast cells use to regulate protein synthesis during the production of spores. He went on to demonstrate that cells employ amyloid-like assemblies to control this pathway. Amyloids are fibrous protein assemblies that are thought to play a critical role in the progression of many severe human diseases such as Alzheimer's, Parkinson's, and prion diseases.

Luke demonstrated that beyond their association with human disease, amyloid-like structures can serve critical



Luke E. Berchowitz, PhD
Assistant Professor of
Genetics and Development
Department
Columbia University Medical Center

biological functions during the production of reproductive cells. These findings have led him to apply his career's worth of expertise studying gametogenesis to the pursuit of dissecting the regulation and function of amyloid-like assemblies. Luke began his assistant professor position in the Department of Genetics and Development at Columbia University Medical Center September 1st of 2016. The goals of his research program are to understand how developing gametes regulate formation and clearance of amyloid-like assemblies. Furthermore, he seeks to understand the molecular mechanisms by which amyloid-like assemblies function in RNA biology. His long-term goals are to apply the lab's findings to the development of therapeutic strategies for neurodegenerative diseases.



Emmanuelle Passegué, PhD
Alumni Professor of
Genetics and Development Department
Director, Columbia Stem Cell Initiative
Columbia University Medical Center

Emmanuelle Passegué, Ph.D., is the Alumni Professor of Genetics and Development and the Director of the Columbia Stem Cell Initiative at Columbia University Medical Center (CUMC). Dr. Passegué received her Ph.D. from the University Paris XI (France), and trained with Dr. Erwin Wagner (Institute for Molecular pathology, Vienna, Austria) and Dr. Irv Weissman (Stanford University, USA) before joining the University of California San Francisco (UCSF) in 2005. Dr. Passegué was a Professor of

Medicine in the Hematology/Oncology Division and the Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research at UCSF until 2016 before joining CUMC in January 2017. Her research investigates the biology of blood-forming hematopoietic stem cells in normal and deregulated contexts such as development of hematological malignancies and physiological aging. Dr. Passegué has received a number of awards and prizes including a Scholar Award from the Lymphoma and Leukemia Society and an Outstanding Investigator Award from NHLBI.

HONORS AND AWARDS

Celebrating the awards, honors and recognition of the faculty of the G&D Department

Congratulations to **Dr. Mimi Shirasu-Hiza**, a recipient of the 2016 Doctor Harold and Golden Lampport Research Awards in Basic Science for outstanding young researchers.

Dr. Rodney J. Rothstein has been awarded the 2016 Inventor of the Year Award from the New Jersey Inventors Hall of Fame, in recognition of his contributions to medical research, leadership and dedicated service to society.

Dr. Gerard Karsenty received the 2016 Triennial Prize for meritorious medical research. Dr. Karsenty was also selected to receive the AACE Frontiers in

Science Award which is to be presented at the 26th Annual Scientific & Clinical Congress in May 2017.

Dr. Riccardo Dalla-Favera was elected a fellow of the National Academy of Inventors and will be inducted in April 2017. Dr. Dalla-Favera was also elected a fellow of the American Association for Cancer Research Academy, for demonstrating the significance of proto-oncogenes and select genetic abnormalities including chromosomal translocations in lymphomagenesis.



*Columbia University
Physicians and Surgeons
Graduation Ceremony
May 18, 2016*

He will also receive the Léopold Griffuel Award which honors scientists and physicians who have major contributions in the understanding, diagnosis, treatment, and prevention of cancers from the ARC Foundation.

Dr. Debra Wolgemuth was among six CUMC faculty members to receive a grant in the fourth round of awards from the President's Global Innovation Fund for "Laboratory-Based PhD Training in Nutritional and Agricultural Sciences in East Africa". The program supports Columbia Faculty who develop projects that increase opportunities for research, teaching, and service around the world.

RESEARCH GRANTS

The G&D Department acknowledges and congratulates faculty who have received major research grants.

Alberto Ciccia, PhD

National Institute of General Medical Sciences
"Transcriptional Regulation by the DNA Damage Response"

Andrew Tomlinson, PhD

National Eye Institute
"Receptor Tyrosine Kinase Activity in Drosophila Eye Development"

Angela Christiano, PhD

National Institute of Arthritis and Musculoskeletal and Skin Diseases
"Alopecia Areata Center for Research Translation (AACORT)"

Benjamin Ohlstein, MD, PhD

Howard Hughes Medical Institute
"2016 Faculty Scholars competition"

Cathy Lee Mendelsohn, PhD

National Institute of Diabetes and Digestive and Kidney Disease

“Generating an Atlas of the Developing Human Urinary Outflow Tract”

David Goldstein, PhD

National Human Genome Research Institute

“Non-coding RVIS in the identification of Pathogenic Mutations in Regulatory Sequence”

Michael Shen, PhD

US Army Medical Research and Materiel Command

“Investigation of a Putative Prostate Stem Cell Niche”

Riccardo Dalla-Favera, MD

National Cancer Institute

“From Pathogenesis to New Therapeutic Targets in Diffuse Large B-Cell Lymphoma”

Riccardo Dalla-Favera, MD

National Cancer Institute

“MSK SPORE in Lymphoma: Targeting Acetyltransferase Gene Inactivation in Diffuse Large B-Cell Lymphoma”

Rodney Rothstein, PhD

National Institute of General Medical Sciences

“Molecular Mechanisms Underlying DNA Double-Strand Break and Crosslink Repair”

Wellington Cardoso, MD, PhD

National Heart, Lung and Blood Institute

Mechanisms Controlling Expansion and Lineage Specification of Airway Progenitors in Development and Disease”

Congratulations

DEPARTMENTAL NEWS

Rachel Ferat was hired in January of 2017 to take on a new position in Genetics and Development. For the first time, we have someone who focuses exclusively on the needs of our students and our Graduate Program in Genetics and Development, as well as the Graduate Training Program in Biophysics and the Graduate Training Program in Endocrinology and Metabolism. In this capacity, Rachel is your go-to person for anything related to graduate students, from admissions to planning a new course to depositing dissertations. You will be hearing from Rachel when it is time for students in your lab to schedule their Qual Exams or TRAC meetings. Rachel also coordinates our Departmental Seminar Series and the Friday Seminar Series for Students and Postdocs, and the Biochemistry and Biophysics Seminar Series.

Rachel M Ferat
Graduate Program
Coordinator
Department of Genetics
and Development



THESIS DEFENDERS

Lori Khrimian

Karsenty Lab–December 2, 2016

“Regulation of brain development and cognition by osteocalcin”

Rory Coleman

Struhl Lab–January 13, 2017

“Making Memories: modes and mechanisms of gene silencing by the polycomb repressive complexes in Drosophila”

Olya Yarychkivska

Bestor Lab–January 24, 2017

“Molecular mechanisms of epigenetic inheritance: novel regulation of DNMT1”

G&D DEPARTMENTAL TUESDAYS SEMINAR SERIES SPRING 2017 SCHEDULE

- April 18th **Harmit Singh Malik, PhD**
Fred Hutchinson Cancer Research Center
Hosted by Dr. Laura Johnston
- April 25th **Stephen L. Helfand, MD**
Brown University
Hosted by Dr. Mimi Shirasu-Hiza
- May 9th **Thomas A. Jongens, PhD**
University of Pennsylvania
Hosted by Dr. Mimi Shirasu-Hiza
- May 16th **Maria Jasin, PhD**
Memorial Sloan Kettering Cancer Center
Hosted by Dr. Alberto Ciccia
- May 23rd **Vincenzo Costanzo, MD, PhD**
IFOM
Hosted by Dr. Alberto Ciccia

Hammer Health Sciences Building
701 West 168th, Room 301
4:00pm

UPCOMING EVENTS

March for Science – Saturday, April 22nd

We ask you to stand up for science, for facts, and unbiased publicly-funded research by joining this march. For those who are not able to make it to DC, please consider coming to the March for Science NYC. Please contact Ms. Rachel Ferat and Dr. Mimi Shirasu-Hiza if you are interested.

G&D Departmental Retreat– September 22nd–23rd

Please mark your calendars for this year's Departmental retreat which will be held at Dolce Basking Ridge Conference Center in Basking Ridge, New Jersey.

STUDENT & POSTDOCS FRIDAY SEMINAR SERIES SCHEDULE

- April 21st Maria Stupnikov
Cardoso Lab
- April 28th Fraulin Joseph
Rothstein Lab
- May 5th Kyle Kaniecki
Greene Lab
- May 12th Marina Ermakova
Goff Lab
- May 19th Sophia Hirsch
Canman

Hammer Health Sciences Building
701 West 168th street, Room 303
12:00pm



Charles R. Cantor
Genetics and Development Retreat
September 16-17, 2016

Genetics and Development Department
Hammer Health Sciences
701 West 168th Street,
16th Floor, Room 1602
New York, NY 10032
(212) 305-4011

<http://www.cumc.columbia.edu/dept/genetics/>

