Happy Holidays! Season’s Greetings!

We are excited to share this December issue of our Biochemistry and Molecular Medicine (BMM) newsletter, an initiative of the department's I-DARE (Inclusion, Diversity, Anti-Racism, and Equity) Taskforce, with you. Each newsletter issue serves to spotlight the contributions of BMM faculty, students, and staff to our university's mission of research, teaching, service, diversity, and equity. As we look forward to a new year, we hope that you have found our bimonthly emails informing and inspiring. We wish everyone a holiday season full of rest and reflection. Happy reading, and we will see you again in 2023!

Diversity, Equity and Inclusion

BMM–EEOP Faculty Mentor Program
The BMM I-DARE Taskforce is proud to announce our first cohort of the BMM-EEOP Faculty-Mentee program! Thanks to funding from the Office for Health Equity, Diversity, and Inclusion, BMM will support three paid positions for undergraduate researchers from the EEOP Biology Undergraduate Scholars Program (BUSP) to conduct research with our BMM faculty. The funding will allow these UC Davis students from diverse backgrounds to focus on research and academics without having to work additional jobs for support. We are grateful that we had several BMM faculty members volunteer to be a mentor, providing a great selection for our students. Our mentor-mentee matching process is complete, and we are excited to introduce our faculty-student mentorships. We look forward to following the development of these second-year BUSP students as they enter their first research lab experience beginning in Winter 2023!

As seen from left to right, Bryan Correa Gonzalez (Biological Sciences), Madelynn Yung (Neurobiology, Physiology, and Behavior), and Natalie Chrisman (Biological Sciences), and their faculty mentors, Dr. Alan Lombard, Dr. Flora Tassone, and Dr. Jeremy Chien, respectively.

A Lookback at Our Annual Retreat

Over 65 faculty, students, and staff gathered at the UC Davis MIND Institute Auditorium for our department’s first in-person retreat in several years on Friday, October 14.

Dr. Luis Fernando Santana, department chair, discussed the state of the department, highlighting the scientific achievements of several faculty members. The I-DARE
committee then reviewed a strategic plan focused on expanding diversity and inclusion and prioritizing retention of all department members. Robust and engaging discussion sessions, highlighted by attendee questions, comments, and suggestions, followed on three key areas of interest: How do we improve diversity at many levels? What would make you feel like you belong to a department? How should we treat each other? The retreat concluded in the afternoon with a data blitz session, which provided 16 students and postdoctoral scholars with opportunities to present their projects on research topics spanning from translational research and ontogenetic drivers to small molecule drug development, biosensors, and more.

We appreciated the presence of all those who were able to attend the retreat, and we look forward to hosting more department events in the future. Please look out for a survey to provide feedback about the retreat in the next few weeks.

An Outreach Program Story

Prevalence of expanded FMR1 alleles in Ricaurte, Colombia: a genetic cluster

As an expert on fragile X syndrome and associated disorders, Dr. Flora Tassone, professor of biochemistry and molecular medicine, has been integrally involved for many years in outreach programs in several countries around the world. One such program — “The Colombian Project of Hope” — is a mission aimed to build hope for the future. The project began in November 2013 as a collaborative effort between the Universidad del Valle in Cali, Valle del Cauca, Colombia, the Universidad Nacional in Bogotá, Colombia, and the University of California, Davis. During a visit to Colombia, Dr. Tassone met many families with fragile X disorders. She had the “great honor” of visiting Ricaurte, a town of approximately 1,400 people in the Cundinamarca District of Colombia. Ricaurte, which has a very high prevalence of individuals with an intellectual disability, has been unfairly ridiculed as “the town of dummies” in Colombia.

In collaboration with Prof. Wilmar Saldarriaga at the Universidad del Valle in Cali and with several researchers at UC Davis, Dr. Tassone is leading a scientific study to characterize the prevalence of FMR1, a fragile X gene mutation, in Ricaurte’s
Over a thousand people were screened in Dr. Tassone’s laboratory. The study demonstrated that the prevalence of \( \text{FMR1} \)-expanded alleles in the premutation and full mutation range, in both men and women, is respectively 10- and 200- to 300-fold higher than in the overall general population.

Having found a high prevalence of mutations in the fragile X gene, the study identified the town of Ricaurte as a genetic cluster for fragile X syndrome, providing an explanation for the high incidence of intellectual disability in this region. These findings underscored the need for support of medical and clinical treatments in Colombia. Indeed, very importantly, a few years into the program, Ricaurte has now a medical doctor and support staff in place and a location where the population has access to health care. The project has so far generated 10 peer reviewed papers. Dr. Tassone, together with other faculty members at UC Davis, recently returned to Ricaurte to meet with local authorities, medical professionals, and the families that have been followed through these eight years of the study. She participated in a special event that featured a documentary about the efforts titled “The Colombian Project of Hope,” which was well-received and appreciated by the Ricaurte families with fragile X syndrome. In the near future, this documentary will be released and featured at the UC Davis MIND Institute.

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### Faculty, Staff and Student Recognitions

#### A Passing of Note

Dr. Michael F. Seldin, professor emeritus of biochemistry and molecular medicine, passed away on Friday, October 14, 2022. Michael was a department member for many years since moving to Davis with his family in 1996. In a note to department faculty, Dr. Luis Fernando Santana wrote that Michael was “a dear friend and colleague to many of us” and “an accomplished biochemist, focusing on genetics and genomics of complex diseases. Michael will be sorely missed by his family and friends.” His obituary, published in The Davis Enterprise, can be read [here](#).

### Awards and Grants

Congratulations to Dr. Justin Siegel, who was named a Fellow of the National Academy of Inventors in recognition of his work on computational enzyme engineering and discovery. Dr. Siegel holds over 100 patents and co-founded 8 startups in the past decade, including PvP Biologics, Peak B, Digestiva, and VinZymes. Read more » [Two UC Davis faculty named Fellows of the National Academy of Inventors](#).
Congratulations to Dr. Luis Carvajal-Carmona and his team, who received D43 training grant funding from the National Cancer Institute Center for Global Health to establish a training program for cancer prevention and precision medicine in low- and middle-income countries in Latin America. Dr. Laura Fejerman, professor of population health sciences, is MPI. Read more » NIH RePORT » RePORTER site.

Congratulations to April Vang, a junior specialist in Dr. Luis Carvajal-Carmona’s laboratory, who was awarded a Diversity Supplement by the National Cancer Institute.

In the News

The Graduate School of Management is partnering with the Innovation Institute for Food and Health and the Barnstorm Foundry to evaluate emerging food technologies. Dr. Justin Siegel — the institute’s faculty director — comments on the partnership’s “critical role” in this UC Davis story. Read more » UC Davis and Barnstorm Foundry Announce Partnership to Identify New Markets for Food Tech.

As part of an ongoing virtual event series called “Plugged In,” Dr. Justin Siegel spoke to Dr. Jonna Mazet about how UC Davis is helping to solve the biggest issues in our food system today by developing new products and devices that can guide consumption decisions. Read more » Faculty experts tackle the world’s grand challenges.

Conferences, Seminars and Workshops

Conference Presentations

Last week, in London, Dr. Flora Tassone presented “Cis- and trans-activating factors drive somatic instability at FMR1” at the 3rd London International Mosaicism Symposium, hosted by the Francis Crick Institute. Read more » 3rd London International Mosaicism Symposium.

Jason Dong, Akash Pal, and Erin Scott, members of Dr. Lin Tian’s laboratory, presented on their research at the mid-November annual meeting of the Society for Neuroscience in San Diego. Read more » The Tian Laboratory at SfN.

Dr. Luis Carvajal-Carmona presented “The need to diversify DNA databases and precision medicine tools: Implications for advancing health equity” at the Genome Center’s Annual Halloween Symposium. Read more » Genome Center’s Annual Halloween Symposium.

Dr. Flora Tassone presented “La genética de los trastornos del neurodesarroll” (The genetics of neurodevelopmental disorders) at “I Congreso Panamericano de Autismo, Sindrome X-Fragil y Trastornos del Neurodesarrollo” — a conference on autism, fragile X syndrome, and neurodevelopmental disorders — held in Cartagena, Colombia. Read more » I Congreso Panamericano de Autismo, Sindrome X-Fragil y Trastornos del Neurodesarrollo.
Dr. Luis Carvajal-Carmona presented “Genetics, Genomics and Precision Medicine of Gastric Cancer in Latinos” at the Sequencing Strategies for Population and Cancer Epidemiology (SeqSPACE) webinar series, hosted by the National Cancer Institute’s Epidemiology and Genomics Research Program, in early October. Read more » Sequencing Strategies for Population and Cancer Epidemiology Studies (SeqSPACE) Webinar Series.

Dr. Luis Carvajal-Carmona was invited to present on a panel at the American Association of Cancer Institutes annual meeting in Kansas City in early October. His talk at the “Next Generation of Precision Oncology” session focused on diversifying models for pre-clinical research. Read more » 2022 AACI/CCAF Annual Meeting Program.

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**Integrated Biomedical Sciences Seminar Series**

The Integrated Biomedical Sciences Seminar Series featured two seminars on Tuesday mornings this month: the first on December 6, at 10 a.m. and the second on Tuesday, December 13, also at 10 a.m. Further details about this series can be found by visiting the seminar calendar.

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**BMM Department Seminar Series**

The BMM Department Seminar Series welcomed Yiyang Gong, Ph.D., Assistant Professor, Department of Biomedical Engineering, Duke University, hosted by Lin Tian, Ph.D., this past week. For future talks, visit the series webpage.

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**BMM Research in Progress Seminar Series**

The BMM Research in Progress Seminar Series will host three BMM faculty — Hongwu Chen, Ph.D., Colleen Sweeney, Ph.D., and Luis Carvajal-Carmona, Ph.D. — over the coming months. Dr. Chen delivered the first of these talks yesterday, Thursday, December 15, from 12-1 p.m. Full details about future talks can be found by visiting the seminar calendar.

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**Frontiers in Pharmacology Seminar Series**

The Frontiers in Pharmacology Seminar Series welcomes upcoming speakers throughout 2023. To view scheduled talks, visit the series webpage.

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**Recent Publications**


Torres J, Bohorquez-Lozano ME, Carvajal-Carmona LG. "Multiregional Sequencing Analysis Reveals Extensive Genetic Heterogeneity in Gastric Tumors from Latinos". Cancer Res Commun. 2022 Nov 2.


Open Positions

1. Assistant Project Scientist — Lo Lab.
2. Assistant/Associate Specialist — Yu Lab.
4. Junior Specialist — Lo Lab.

Contribute to the next issue!

Please send submissions of announcements, including new members, seminars, conferences, workshops, events, publications, grants, outreach, news, and more, for the next issue of this newsletter to Daniel Erenstein by January 25.

You can send questions, comments, and feedback to Daniel anytime as well. We'll be back in your inbox in early February. Until then, take care! Happy New Year!