Watson School 2012 graduates


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1 Patrick Finigan
2 Kyle Honegger
3 Elizabeth Nakasone

Patrick Finigan

Beckman Graduate Student; Anderson Fellow
The origin of novel phenotypic variation in Arabidopsis *allopolyploids*

It may only be a coincidence that Patrick Finigan, having grown up in California's fabled Napa Valley, would be drawn to the work of plant geneticist Rob Martienssen when planning his doctoral research. It was under Martienssen's influence that Finigan focused on experimenting with plants possessing twice their normal genomic content. When hybridized with other plants, these plants proved capable of generating novel properties such as larger fruits. Finigan particularly appreciated his mentor's help in "piecing together disparate bits of science to form a great hypothesis or idea." After graduation, Finnigan says he hopes to pursue a career in the biotechnology industry.


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Kyle Honegger

Crick-Clay Fellow; NIH Predoctoral Trainee
Neural coding in the Drosophila *mushroom body*

Kyle Honegger came to CSHL from Chicago knowing that he wanted to learn more about imaging brain function *in vivo*. His thesis placed him in the thick of research that Glenn Turner's lab recently published on how neurons in a part of the fly brain called the mushroom body (MB) process and make sense of incoming olfactory signals. This work provided Honegger with an opportunity to help set up new imaging equipment, and to participate in studies which demonstrated the "sparseness" of the neuronal response – the fact that only a few among the total complement of MB neurons are involved in responding to a given odor. Honegger, who says his only difficulty has been in persuading family members back home that "flies actually *do* have brains," now seeks a postdoc position, hoping to study how selective pressures have influenced the evolution of olfactory systems.

Elizabeth Nakasone

Quick Fellow; Hearst Foundation Scholar; U.S. Army Breast Cancer Research Program Predoctoral Fellow
A stromal CCL2/CCR2 signaling axis regulates chemotherapeutic response in a mouse model of breast cancer

Impressed by a research seminar offered by a visting lecturer, Mikala Egeblad, on the importance of the tumor microenvironment in cancer,

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4 Frederick Rollins
5 Zhenxun Wang

Liz Nakasone made arrangements to study with Egeblad once she joined the CSHL faculty in 2009. "Mikala was doing a lot of translational work, and that is what I want to do." Nakasone's dissertation research concerns myeloid cell recruitment to the tumor site following chemotherapy. She focuses on how this aspect of the innate immune response influences the response to chemotherapy and the likelihood of relapse. Grateful for the support she has received from her mentor, who she describes as being "close to the experiments," Nakasone now hopes to continue research on the tumor microenvironment in an academic setting.

Frederick Rollins

Cashin Fellow
The genetics and epigenetics of erlotinib resistance in non-small cell lung cancer

During his time at the Watson School Fred Rollins was involved in research on some of the hottest fields in molecular biology: methods of delivering RNA interference (RNAi) to cells in a therapeutic context; improving cancer screening; and defining the so-called cancer methylome. The latter provided a framework for his thesis research, in the laboratory of Professor and HHMI Investigator Greg Hannon. The methylome in the specific context of cancer is the genome-wide distribution of methylated sequences, which impact gene regulation and expression. Rollins' research focused on how methylation profiles were retained in primary tumors and in various cell lines. Rollins has high praise for his mentor. "Greg is so smart that half the time you walk out of a conversation and say, 'What? Am I supposed to know all these things already?!' He's extremely creative and always seems to ask the right question at the right time." Rollins now contemplates a postdoc job and hopes at some point to be part of a startup that works on the problem of delivering RNAi therapeutics.

Zhenxun Wang

A*STAR National Science Scholar, Singapore
The mechanism and manipulation of PK-M alternative splicing

A native of Singapore, Wang came to the US because he wanted to study molecular biology. And, he says, on the eve of obtaining his doctorate, "I'm in it for keeps." He gravitated to the laboratory of Adrian Krainer, with whom he has performed research on RNA splicing. Specifically, Wang has studied how alternative splicing yields two isoforms of a protein called pyruvate kinase, one of which — PK-M2 — alters cells' ability to metabolize glucose, in a phenomenon known as the Warburg effect which plays an important role in cancer's abnormal metabolism. Wang will now return to Singapore, where he will take up a postdoc at the Agency for Science, Technology and Research (A*STAR). He expects to conduct research in a lab that has recently discovered a new target in cancer metabolism. "What I like about science is solving problems," he says. "Things always go wrong; but in the process of overcoming these difficulties, sometimes you find things that are new. That is pretty rewarding."