

Two more trainees enter their pathway to independence

By Eddy Ball

This summer, NIEHS postdoctoral fellows Kin Chan, Ph.D., and Bret Freudenthal, Ph.D., became the latest winners of an NIH [Pathway to Independence Award \(K99/R00\)](http://grants1.nih.gov/grants/guide/contacts/parent_K99_Roo.html).
(http://grants1.nih.gov/grants/guide/contacts/parent_K99_Roo.html)

The award is designed to facilitate a timely transition from a mentored, postdoctoral research position to a stable, independent research position in two phases. The first phase (K99) provides 1-2 years of mentored support, which is followed by up to 3 years of independent support (R00).

Chan, a molecular geneticist whose research is mentored by senior associate scientist [Dmitry Gordenin, Ph.D.](#), is a member of the Chromosome Stability Group, headed by lead researcher [Michael Resnick, Ph.D.](#) During the K99 phase, Gordenin will serve as mentor of the K99 phase while David Fargo, Ph.D., head of the Integrative Bioinformatics Group, will provide additional expertise as co-mentor.

Freudenthal is a structural biologist in the DNA Repair and Nucleic Acid Enzymology Group, led by [Samuel Wilson, M.D.](#), who will be Freudenthal's primary mentor. Others in Wilson's group and in the Laboratory of Structural Biology will also make important contributions, in particular staff scientist William Beard, Ph.D.

The awards also provide financial support. During the R99 phase, awardees receive a salary of up to \$75,000 plus fringe benefits, and up to \$25,000 in research support each year. The R00 phase includes support up to \$249,000 per year, which includes salary, fringe benefits, and research support. Research projects funded must have a defined focus in the environmental health sciences, and be responsive to the mission of NIEHS.

In letters to the new winners, NIEHS Health Scientist Administrator Carol Shreffler, Ph.D., lauded the trainees and underscored the importance of the Pathway to Independence Award. "Your scientific credentials and training were deemed extremely meritorious...", she wrote. "NIEHS considers this K99/R00 award as the first step in your development as an important member of the NIEHS grantee community."

Productive scientists with quality mentors

Both Freudenthal and Chan are winners of Fellows Awards for Research Excellence (FARE). Along with co-authoring other papers published by their groups in leading peer-reviewed journals, they were first authors on papers based on their FARE studies. In 2013, the NIEHS Office of the Scientific Director recognized both studies as Intramural Papers of the Month.

Freudenthal won his 2014 FARE for a study mentored by Wilson, utilizing advanced macromolecular crystallography, and subsequently published in the journal *Cell*. Chan won his 2012 FARE for a DNA mutation study mentored by Gordenin and Resnick, and later published in *PLOS Genetics*.

Wilson, Resnick, and Gordenin have been recognized in the past for their quality mentorship, both by their trainees and their fellow lead researchers. In addition, Wilson was honored with the prestigious 2014 Southeast Regional Collaborative Access Team (SER-CAT) Outstanding Science Award for the high scientific impact of his group's paper (see [story](#)).

Chan and Freudenthal join two other trainees awarded K99/R00 support in 2014, which could turn out to be a record year for NIEHS - Natalie Gassman, Ph.D., also of Wilson's group, and Shannon Whirlledge, Ph.D., a member of the Molecular Endocrinology Group, led by John Cidlowski, Ph.D. (see [story](#)).

Trainees receive encouragement from NIEHS Scientific Director Darryl Zeldin, M.D., and Deputy Scientific Director Bill Schrader, Ph.D., who directs scientific training at the Institute.

Citations:

[Chan K, Sterling JF, Roberts SA, Bhagwat AS, Resnick MA, Gordenin DA.](#)

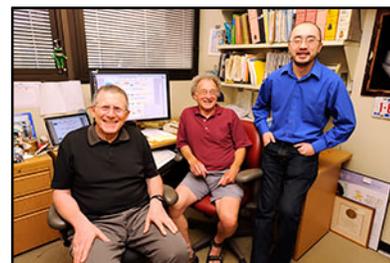
(<http://www.ncbi.nlm.nih.gov/pubmed/23271983>)

2012. Base damage within single-strand DNA underlies *in vivo* hypermutability induced by a ubiquitous environmental agent. *PLoS Genet* 8(12):e1003149. [Summary](#)

[Freudenthal BD, Beard WA, Shock DD, Wilson SH.](#)

(<http://www.ncbi.nlm.nih.gov/pubmed/23827680>)

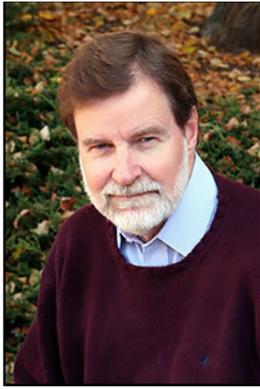
2013. Observing a DNA polymerase choose right from wrong. *Cell* 154(1):157-168. [Story Summary](#)



Chan, standing, said of his award, "I hope that my research [to define the mutation signatures induced by poorly understood environmental carcinogens] will be of outstanding value to the mission and priorities of the NIEHS extramural research program for a long time to come." Shown with him are Gordenin, left, and Resnick. (Photo courtesy of Steve McCaw)



"I am interested in probing how DNA polymerases process oxidative DNA damage and the influence this has on larger repair complexes," said Freudenthal. "Understanding how oxidative DNA damage arising from environmental exposures is processed will identify novel steps that can be exploited to modulate repair and intervene to enhance human health." (Photo courtesy of Steve McCaw)



Wilson has authored and co-authored more than 400 research and environmental health policy publications, and has been on the editorial board of several journals. (Photo courtesy of Steve McCaw)



Beard served as coauthor on five of the six papers Freudenthal has published with Wilson's group. (Photo courtesy of Steve McCaw)

The Environmental Factor is produced monthly by the [National Institute of Environmental Health Sciences \(NIEHS\)](http://www.niehs.nih.gov/)

(<http://www.niehs.nih.gov/>)

, Office of Communications and Public Liaison. The content is not copyrighted, and it can be reprinted without permission. If you use parts of Environmental Factor in your publication, we ask that you provide us with a copy for our records. We welcome your [comments and suggestions](#).

(bruskec@niehs.nih.gov)

This page URL: NIEHS website: <http://www.niehs.nih.gov/>

Email the Web Manager at webmanager@niehs.nih.gov