

work of this group, we published the matrix method in 1989 (1), several years before the first description of the method by Hammer and colleagues.

Third, James Kazura, a malaria immunologist at Case Western Reserve University School of Medicine, is quoted as saying that "a brute-force approach where you test every single peptide [in a given protein] is obviously not possible for financial and logistical reasons." Yet, we have done just that in a study performed in collaboration with K. Melief and M. Kast (2). Our group has been working for more than 15 years developing high-throughput assays to evaluate binding of specific peptides to a large panel of MHC molecules. Our current throughput is about 10^6 assays per year and is easily scalable. It is the basis of our functional genomics programs. Other groups have developed large assay capacity as well.

Lastly, regarding the computer algorithms based on artificial neural networks that are capable of "learning" as more data are supplied, it is worth mentioning that these algorithms are in fact less efficient at predicting whether a peptide will bind a MHC molecule than are the matrix methods we, Hammer, Rammensee, and others use (3). The method used for prediction, however, is not as important as the size of the database available to train the system or derive the matrix for predicting binding capabilities. The larger the database, the more accurate the prediction. Hence, our group has been amassing a large database that currently contains binding constants for more than 50,000 different MHC-peptide combinations. Such large amounts of data are critical in trying to identify peptides capable of binding many different MHC variants, "a must for a widely applicable vaccine," as Hagmann points out. In terms of the overall success rate of our method, in various studies performed in collaboration with leading academic investigators, epitopes from various disease indications (hepatitis B and C viruses, HIV, and *Plasmodium falciparum*) were studied (4). The success rate of epitope prediction from these studies ranged from 85 to 100%. Results from these studies have been incorporated in the design of several different experimental vaccines that are now in the early stages of clinical and preclinical development.

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4. R. Bertoni et al., *J. Clin. Invest.* **100**, 503 (1997); K. Chang et al., *J. Immunol.* **162**, 1156 (1999); P. Scognamiglio et al., *J. Immunol.* **162**, 6681 (1999); V. Lamnaca et al., *Hepatology* **30**, 1088 (1999); H. Diepolder et al., *J. Virol.* **71**, 6011 (1997); D. Doolan et al., *Immunity* **7**, 97 (1997); D. Doolan et al., *J. Immunol.* **165**, 1123 (2000).

"Diamond Ceiling" for Asian Americans

Scientists and engineers of Asian-American descent are intelligent, hard-working, and motivated individuals, yet they are seldom rewarded. It is not just the Department of Energy (DOE) laboratories that treat Asian Americans as "high-tech coolies" and do not promote them into leadership positions, as Andrew Lawler discusses in his News Focus article "Silent no longer: 'model minority' mobilizes" (10 Nov., p. 1072); the situation is widespread in academia and industry as well. According to statistics from the Department of Education (1), only about 1.6% of those of executive/administrative/managerial rank in fall 1993 were Asian or Pacific Islanders, whereas about 86% were white, non-Hispanics. Generally, if you are an Asian American, you are praised for good work and your



Asian-American scientists are examining their status in the research community. Photos clockwise from top left: Kalina Wong, George Kwei, and Joel Wong from the News Focus article.

loyalty to the organization, but most promotions and other forms of reward and recognition seem to be reserved for other colleagues.

In my opinion, it is not just a "glass ceiling," but it is becoming a more hardened "diamond ceiling" as more Asian Americans excel in all areas of science and technology. The solution may not be to litigate all such matters, but considering the injustice and agonizing experiences suffered by Wen Ho Lee,

the Asian-American community needs to wake up and get organized. United, we can raise awareness and get what is legally, morally, and rightfully due to us as Asian Americans. It is a matter of pride for all Asian Americans that they have maintained high work ethics, and it is time that we stand up and be counted for what we deserve.

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References

1. Available at www.ed.gov/NCES/

CORRECTIONS AND CLARIFICATIONS

Policy Forum: "Surveillance and privacy" by R. Bayer and A. L. Fairchild (8 Dec., p. 1898). Notes 2 and 5 were inadvertently omitted from the text. They should have appeared at the end of the third and seventh paragraphs, respectively.

NetWatch: "Krill stuff" (24 Nov. p. 1459). The Antarctic krill *Euphausia superba* was erroneously described as a copepod. Also, the NetWatch item "Growing a book of science" (13 Oct. p. 227) should have indicated that a movie explaining the seasons shows how Earth's tilt changes "relative to the sun."

Letters: "Thoughts on the causes of tree mortality in Appalachia" by H. S. Neufeld (17 Nov., p. 1301). The species names of the trees were either misspelled or incorrect. The proper ones are as follows: red spruce (*Picea rubens*), Fraser fir (*Abies fraseri*), and balsam woolly adelgid (*Adelges piceae*).

Perspectives: "Nitrogen on the moon" by R. H. Becker (10 Nov., p. 1110). Some of the labels in the accompanying figure were incorrect. On the arrow marked "Solar wind," the labels should have read " $^{14}\text{N}/^{36}\text{Ar} \approx 37$ " and " $^{15}\text{N}/^{14}\text{N} \sim 0.0028$ or ~ 0.0045 ." On the arrow marked "Meteorites," the label should have read " $^{15}\text{N}/^{14}\text{N} \sim 0.0037$." The labels on top of the cube should have read " $^{14}\text{N}/^{36}\text{Ar} \approx 370$ " and " $^{15}\text{N}/^{14}\text{N} \sim 0.0028$ to ~ 0.0045 ."

Reports: "Invasive plants versus their new and old neighbors: a mechanism for exotic invasion" by R. M. Callaway and E. T. Aschehoug (20 Oct., p. 521). The figure that appeared with the legend to Fig. 3 was Fig. 2 and vice versa. Figure 2 described biomass, and Fig. 3 illustrated reduced ^{32}P uptake of bunchgrass species.

Reports: "Optically defined multifunctional patterning of photosensitive thin-film silica mesophases" by D. A. Doshi et al. (6 Oct., p. 107). In Fig. 1, the "greater than" symbol indicating the relation between the variables n_{irr} and n_{unirr} in the diagram for Scheme 3 was incorrect. The symbol should have been "less than."