

# nature REVIEWS

## NATURE REVIEWS GENETICS

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Developmental genetics has claims on being the boom sub-genre of our field. Even before the advent of RNAi technology and morpholinos, the use of gene targeting had already allowed huge strides to be made in almost all areas of research into development. A typical example of the routine use of these tools comes from a recent paper that is discussed in this month's Highlights, in which a morpholino knockdown helped link the *INVS* gene to a developmental kidney disease.

The diversity of model organisms has also been a boon to developmental genetics. The review by Erez Raz on page 690 illustrates this point beautifully, with its summary of zebrafish studies on the origin and migration of germ cells, which add significantly to previous work on flies, worms and mice. However, conceptual rather than technical advances might provide the next big boost. Peter Carmeliet's insightful integrated look at the developmental genetics of blood vessels and nerves (page 710) shows that just looking at a particular problem in a new way can yield new questions and ways of addressing them.

Encouraging a new outlook is exactly the point of Scott Gilbert's Opinion article on teaching evolution through developmental genetics. Previously, population genetics has been the *lingua franca* of teachers of evolution, but the author argues that progress in developmental genetics has been such that the time is ripe to broaden this approach.

A new approach is also championed by Eric Kmiec and colleagues on page 679. Their overview of progress in repairing defective genes *in situ* indicates that this approach might reinvigorate gene therapy. This is just as well given that, as revealed in two papers discussed in the Highlight on page 671, the honeymoon might be over for gene therapy researchers whose hopes lay with RNAi.



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