Changing of the guard

Allan Bradley is to head the Sanger Centre, a powerhouse of the Human Genome Project. Trisha Gura asks how he will meet the challenges.

Talking in pure scientific terms, Allan Bradley — due to become director of the Sanger Centre in October — is an obvious choice to lead the largest DNA sequencing centre involved in the Human Genome Project (HGP) into the post-genomic era. As the human genome is completely sequenced and annotated over the next two years, action at the centre, near Cambridge in England, will shift to establishing the function of each constituent gene. Bradley's current lab at the Baylor College of Medicine in Houston, Texas, is a world leader in elucidating the functions of mouse genes using gene-targeting technology.

"He was our candidate of choice because of the really fantastic work he has done on the analysis of gene function in animal systems," says Michael Dexter, director of the Wellcome Trust, which announced his appointment last week (see *Nature* **405,** 264; 2000). But as director of the Wellcome-funded centre, Bradley will face political challenges every bit as daunting as the scientific ones.

For anyone familiar with the fractious politics of genomics, one question looms large: how will Bradley handle relations with Celera? Craig Venter claims that his company, based in Rockville, Maryland, will assemble a finished human genome sequence at about the time the HGP publishes its 'draft' sequence later this year. But while the HGP's sequence is immediately and freely available to all, anyone wanting to access Celera's data will have to accept the company's terms and conditions (see *Nature* **404,** 324; 2000).

This has driven a wedge between Celera and the public project, with current Sanger director John Sulston leading criticism of the company. As the disagreement between the HGP and Celera became increasingly acrimonious, relations between Sulston and Venter degenerated. After negotiations between the HGP and Celera (designed to establish a framework for cooperation) broke down, the two men traded insults in public (see *Nature* **404,** 117; 2000).

Significantly, Bradley seems to want to build bridges. He says he is committed to the Wellcome Trust's policy on free public access to genome data, but praises Venter's scientific contribution. Like many researchers, Bradley remains unsure if Celera's 'whole-genome shotgun' sequencing method will provide a short cut to the human genome. But, he says, the approach "has changed the way people are thinking and doing things". And having a powerful competitor has energized the HGP, he claims. "Upon reflection, the element of competition certainly has brought the mouse sequencing to a more urgent priority than it would have been otherwise."

Bradley, who has served on the scientific advisory board of several biotech companies, is also seen as more open to industrial collaboration than his predecessor. Earlier this month, Sulston was quoted by *The Guardian* newspaper as saying: "Global capitalism is raping the Earth." Sulston says his concern was not with industry in general, but with Celera's aggressive stance. "It concerned me that any one company might gain a monopoly on the fundamental operation. But that danger is receding now as more and more companies come in," says Sulston, who is proud of his achievements as Sanger director. "The bulk of the human genome is really and truly out in the public domain. I have pushed for that very strongly." But he is less bullish about his disagreement with Venter: "I regret that it became so public."

> Mouse studies will be key to identifying the function of human genes

With the shift into functional genomics, Sulston agrees that Bradley is the right person to lead the Sanger Centre. Raw sequencing will still be important: the mouse genome and probably the zebrafish are among several model organisms the centre is expected to target. But the functional studies that are Bradley's forte will assume a growing importance. "He has a proven record for doing that sort of genetics on a large scale," says deputy director Richard Durbin.

Bradley, a youthful 40, spent his graduate and postgraduate years at the University of Cambridge under the tutelage of geneticist Martin Evans. At Baylor, where he is now a Howard Hughes Medical Institute investigator, he has used gene targeting to disrupt specific genes in mouse embryonic stem cells. By inserting these cells into embryos, and breeding from the resulting mice to obtain animals that are pure bred for the genetic modification in question, he has unravelled the functions of legions of mouse genes. Once the mouse sequence is available alongside the human, similar mouse studies will become key to identifying the function of human genes, especially in disease.

Bradley's professional rivals say the Sanger directorship will test his talents to the full — but they're confident that he's up to the challenge. "He is an outstanding scientist," says Mario Capecchi of the University of Utah in Salt Lake City, a pioneer of mouse gene-targeting studies. "He is quiet but energetic, and he is thoughtful. My feeling is that he is certainly capable of doing a good job." ■

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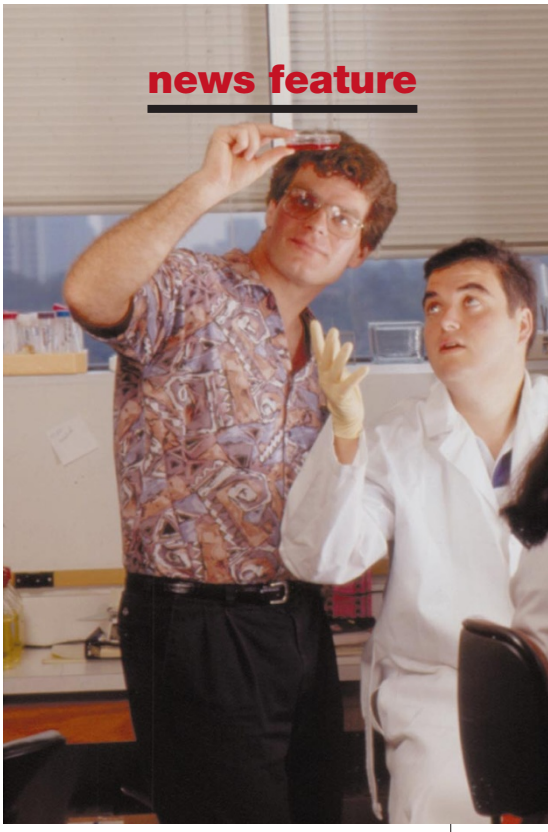

BAYLOR COLLEGE OF MEDICINE

Careful: Bradley (left) will need diplomatic skills.

WELLCOME TRUST

Solid ground: the Sanger is the biggest sequencing centre in the international Human Genome Project.