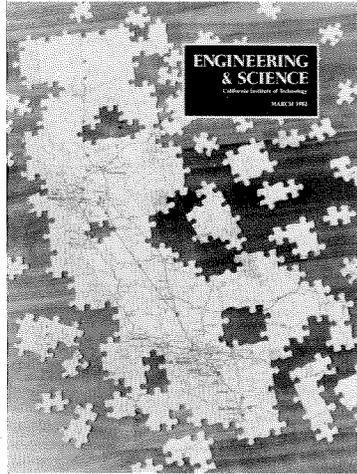


In This Issue



Where to Draw the Line

On the cover — an unfinished jigsaw puzzle of the state of California presents one kind of challenge. Taking the state apart and putting it back together again in districts for legislative seats so as to reflect changes in population distribution and insure equal representation offers quite another. Last year, as



chief consultant for technical operations for the California State Assembly Elections and Reapportionment Committee, Bruce Cain had a rare, real-world opportunity, for a political scientist. He participated in what has been called the “most political” (and “most selfish”) duty of legislators — redividing the state into districts for legislative seats.

It was an educational experience, to say the least, and Cain has not been spared the political flak that comes from the “inevitable differences of opinion.” So far, those differences have impeded approval in Sacramento of the reapportionment plan that emerged from Cain’s labors, although the California Supreme Court ruled recently that it will at least be used in this year’s elections. Final acceptance hangs on a voter referendum in June.

Cain directed the reapportionment work on a year’s leave of absence from his position as assistant professor of political science at Caltech, which he has held since 1976.

He earned his BA from Bowdoin College in 1970, then, as a Rhodes Scholar, studied politics at Oxford, where he received a B.Phil. degree in 1972. His PhD is from Harvard (1976).

Cain’s major fields of interest are voting behavior and political parties in Great Britain and the United States, and he has extensive background in applying quantitative methods to election procedures. He is currently writing a book, a part of which is adapted on page 4 as “The Reapportionment Puzzle,” explaining some of the complex interests and issues that a reapportioner must balance.

Good Vibes

Ever since the Charlie Lauritsen days of the early 1930s, being associated with Kellogg Radiation Laboratory has involved having a particular state of mind, characterized by loyalty to Kellogg and its people, to doing good science, and to enjoying it. It was appropriate, then, that last November Kellogg’s 50th birthday was celebrated joyfully and by people who have been a part of Kellogg in one way or another over the years. The technical papers presented were models of good science — past, present, and future — and everything was liberally laced with auld lang syne. One especially happy coincidence was that the 70th birthday of Kellogg’s senior member, Willy Fowler, could be celebrated at the same time. On page 15, “Yesterday, Today, and Tomorrow” is a review of the conference, and on page 18, “Phypty Years of Phun and Physics in Kellogg” is a condensed version of Phowler’s talk at the San Francisco meeting of the American Physical Society and the American Association of Physics Teachers in January of this year.

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Getting on the Nerves



A very good case for the relevance of basic research was made by Jeremy Brockes in his Watson

lecture, “Nerve, Myelin, and Multiple Sclerosis,” and in the article adapted from it beginning on page 9. His work using antibodies to label and isolate specific classes of cells within the nervous system is beginning to provide insights into how these cells manufacture the myelin sheath that surrounds and insulates the nerve axon. The neurological disease multiple sclerosis results from the loss of myelin in the central nervous system, and an understanding of the process of myelination, which is best studied under the defined conditions of cell culture, could contribute to its eventual cure.

Brockes, associate professor of biology, has been at Caltech since 1978. Born in Haselmere in Surrey, England (reportedly a quaint, picturesque village), he did his undergraduate work at St. John’s College, Cambridge University, and graduate work in molecular biology at Edinburgh University. It was only after completing his PhD in 1972 that he became interested in neurobiology and did his initial postdoctoral work in that field at Harvard Medical School. After returning to work in the Medical Research Council Neuroimmunology Group at University College London, he crossed the Atlantic again, this time to California. Brockes was recently one of 14 scientists nationwide to receive a \$100,000 McKnight Foundation Neuroscience Development Award for advanced research.

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