

## *Projects Completed FY 1994–95*

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Projects in this section have been completed or did not receive support through the DOE Human Genome Program in FY 1996.

### *Sequencing*

Sequencing by Hybridization: Methods to Generate Large Arrays of Oligonucleotides

**Thomas M. Brennan**

Sequencing by Hybridization: Development of an Efficient Large-Scale Methodology

**Radomir Crkvenjakov**

Genomic Instrumentation Development: Detection Systems for Film and High-Speed Gel-Less Methods

**Jack B. Davidson** and Robert S. Foote

Single-Molecule Detection Using Charge-Coupled Device Array Technology

**M. Bonner Denton, Richard Keller**, Mark E. Baker, Colin W. Earle, and David A. Radspinner

Coupling Sequencing by Hybridization with Gel Sequencing for Inexpensive Analysis of Genes and Genomes

**Radoje Drmanac**, Snezana Drmanac, and Ivan Labat

Physical Structure and DNA Sequence of Human Chromosomes

**Glen A. Evans**

Using Scanning Tunneling Microscopy to Sequence the Human Genome

**Thomas L. Ferrell, Robert J. Warmack, David P. Allison**, K. Bruce Jacobson, Gilbert M. Brown, and Thomas G. Thundat

DNA Sequence Analysis by Solid-Phase Hybridization

**Robert S. Foote**, Richard A. Sachleben, and K. Bruce Jacobson

DNA Sequencing Using Stable Isotopes

**K. Bruce Jacobson**, Heinrich F. Arlinghaus, Gilbert M. Brown, Robert S. Foote, Frank W. Larimer, Richard A. Sachleben, Norbert Thonnard, and Richard P. Woychik

Preparation of Oligonucleotide Arrays for Hybridization Studies

**Michael C. Pirrung**, Steven W. Shuey, David C. Lever, Lara Fallon, J.-C. Bradley, and William P. Hawe

Improvement and Automation of Ligation-Mediated Genomic Sequencing

**Arthur D. Riggs** and Gerd P. Pfeifer

\*Analysis of a 53-Kb Nucleotide Sequence from the Right Genome Terminus of the Variola Major Virus Strain India-1967

Sergei N. Shchelkunov, Vladimir M. Blinov, Sergei M. Resenchuk, Alexei V. Totmenin, Viktor N. Krasnykh, Ludmilla V. Olenina, Oleg I. Serpinsky, and Lev S. Sandakhchiev

A High-Speed Automated DNA Sequencer

**Lloyd M. Smith**

Characterization and Modification of DNA Polymerases for Use in DNA Sequencing

**Stanley Tabor**

### *Mapping*

\*Toward Cloning Human Chromosome 19 in Yeast Artificial Chromosomes

**Inga P. Arman**, Alexander B. Devin, Svetlana P. Legchilina, Irina G. Efimenko, Marina E. Smirnova, and Dina V. Glazkova

A Panel of Mouse-Human Monochromosomal Hybrid Cell Lines, Each Containing a Single Different Tagged Human Chromosome

Arbansjit K. Sandhu, G. Pal Kaur, and **Raghbir S. Athwal**

\*Preparation of a Set of Molecular Markers for Human Chromosome 5 Using G+C-Rich and Functional Site-Specific Oligonucleotides

**M.L. Filipenko**, A.I. Muravlev, E.I. Jantsen, V.V. Smirnova, N.A. Chikaev, V.P. Mishin, and M.A. Ivanovich

An Improved Method for Producing Radiation Hybrids Applied to Human Chromosome 19

**Cynthia L. Jackson** and Hon Fong L. Mark