

Index

- Accreditation, 77-79
- Admissibility
 DNA tests, 14, 16-17, 98-101, 103-105, 107, 157-172
 DNA tests, limited or barred, 16, 103, 105, 108, 157
 scientific evidence, 14, 15, 91, 93, 95-%
 State statutes for DNA testing, 107
- Advisory Committee on Automated Personal Data Systems, Federal Code of Fair Information Practices, 127
- Advisory Policy Board (APB)-NCIC, 20, 125-127
- Alabama
 number of DNA cases in, 15
 reported uses of DNA typing in, 16, 158
- Alaska
 number of DNA cases in, 15
 reported uses of DNA typing in, 16, 158
- American Academy of Forensic Sciences (AAFS), 72
- American Association of Bioanalysts, clinical laboratory regulation, 13, 78
- American Association of Blood Banks (AABB)
 proficiency testing program, 79
 quality assurance standards for paternity testing of, 72
- American Association of Trial Lawyers, 73
- American Bar Association, 73
- American Board of Criminalistics, 76
- American Civil Liberties Union, 73
- American Osteopathic Association, clinical laboratory regulation, 13, 78
- American Society for Microbiology, survey of membership in *Hopkins case*, 142
- American Society of Crime Laboratory Directors (ASCLD), 72, 141, 146
 accreditation program, 12, 77-78, 146
 proficiency testing program, advisory capacity of, 72, 146
 support for national databank based on FBI RFLP protocol, 124
 survey of members, 142
- American Society of Histocompatibility and Immunogenetics (ASHI), quality assurance guidelines of, 72
- American Society of Human Genetics (ASHG)
 preservation of DNA samples, points to consider by, 133
 quality assurance guidelines, points to consider by, 72
- American Type Culture Collection, 121
- Andrews, Tommie Lee, 99, 108, 105, 160
- Antitrust Division (U.S. Department of Justice), 78
- Argentina, 51
- Arizona
 law establishing DNA databank in, 16, 20, 122, 123
 number of DNA cases in, 15
 reported uses of DNA typing in, 16, 158
- Arkansas
 number of DNA cases in, 15
 reported uses of DNA typing in, 16, 158
- Army (**U.S.**)
 reported use of DNA typing in, 172
see also Military
- Ashton, Jeffrey, 99
- Attorney General (U. S.)
 oversight and setting of standards, 29-30
 role in crime-related information exchange, 125
- Australia, 24, 145
- Automated Fingerprint Identification Systems (AFIS), 114
- Band shift, 10-11, 63, 65
- Beirne, D., 119
- Biotechnology Science Coordinating Committee, monitoring DNA technologies, 81
- Brandeis, Justice, 111
- Bureau of Justice Statistics (BJS), study of rates of recidivism, 22, 129
- California
 law establishing DNA databank in, 16, 20, 122-123
Martinez case, 157, 159
 number of DNA cases in, 15
 reported uses of DNA typing in, 16, 157, 158-159
- California Association of Crime Laboratory Directors (CACLD), 72
 proficiency test administered by, 79-80, 105
 survey of interest in DNA typing conducted by, 142
- California Association of Criminalists (CAC), 72, 76
- California Department of Justice, 72
- Canada
 Gander, Newfoundland incident, 130
 Royal Canadian Mounted Police, 24, 145
- Casselman, Murrel, 89
- Castro, Jose, 103
- Cellmark Diagnostics (Maryland), 148
 costs of services, 25, 149
 crime laboratories contracting with, 149
 criminal cases and investigations examined by, 157-172
 testimony as expert witnesses by, 98
- Certification, 76-77
- Cetus Corp. (California)
 Forensic Science Associates' licensing agreement with, 148
 patent for PCR, 148-149
 test kit marketed by, 149
- Civil liberties, 21-23
 policy options for, 35-38
see also Privacy
- Clinical** laboratories

- Federal regulation of, 12-13, 29, 71, 78
 proficiency testing in, 80
 State regulation of, 75-76
 see also *Clinical Laboratory Improvement Amendments of 1988*
- Clinical Laboratory Improvement Amendments of 1988 (CLIA), 12-13, 78
- Cobey, Kenneth, 108
- Collaborative Testing Services (CTS), proficiency testing program, 79
- College of American Pathologists, clinical laboratory regulation, 13, 77, 78
- Colorado
 law establishing DNA databank in, 16, 20, 123
 number of DNA cases in, 15
 reported uses of DNA typing in, 16, 159-160
- Computers
 analyzing DNA tests using, 18-21, 113, 114-120
 cost-effectiveness in court, 118-120
 cross-jurisdictional networks of, 19-20, 125-128
 FBI model system, 119
 interpretation of PCR test results, 117-118
 interpretation of RFLP analysis, 114-117, 118
 interpretation of RFLP analysis, potential problems, 18, 119
 storing DNA results in, 19-21, 120-128
 verification and reliability of, 18, 119
 see also Databanks
- Congress, U. S., policy issues and options for, 26-38
- Connecticut
Hinton case, 157, 160
 number of DNA cases in, 15
 proposed law establishing DNA databank in, 16, 20, 124
 reported uses of DNA typing in, 16, 160
- Consensus Development Program (NIH), 28, 73-74
- Constitution, U. S., 75, 80, 81, 82
 considerations in obtaining biological evidence, 97-98
 Fifth Amendment, 17, 97-98
 Fourteenth Amendment, 17, 98
 Fourth Amendment, 17, 98, 108
 Right to privacy, 128
 Sixth Amendment, 17, 98
 see also Privacy
- Controls
 for PCR, 69-71
 for single-locus probe analysis, 62-64
- costs
 FBI equipment and computer, 118-120
 FBI estimates of DNA typing, 25, 143-144
 forensic services by private laboratories, 25, 149
 of DNA typing, impact on defense, 17-18, 26, 101
 onsite DNA testing, 23-25
 paternity services by private laboratories, 149
 quality assurance, 14, 79
 savings to courts in, 17, 100
 to States of implementing DNA databank networks, 127
- Council on Forensic Science Educators, 72
- courts
 DNA in, 14, 16-17, 98-100, 157-172
 pretrial hearings of DNA evidence in, 101, 103-105
 role in quality assurance, 82
 scientific evidence in, 14, 16, 91, 93, 96
 trial strategy when using DNA in, 107
- Crime laboratories
 budgets of, 144-145
 budget requests for DNA testing of, 150
 contracting by, 148-150
 involvement in DNA testing of State and local, 147-152
 not currently using DNA testing, 147-148
 onsite DNA testing by, 150-151
 OTA survey of, 23-26, 129, 141, 144-153
 plans for DNA testing by, 23-25, 147, 148
- Databanks
 access to information in, 133-134
 accessibility to State criminal history files in, 22-23, 128, 134
 creation and use of, 19, 120-128
 crime laboratories' interest in, 19, 146-147, 152
 de facto national, 21, 113
 ethnic and racial data collected in, 20-21, 68, 120-121, 122
 existing storehouses of genetic information, 121
 fair information practices, 127-128
 FBI plans for types of, 19, 120-124, 151
 information exchange via, 20, 125-128
 information proposed for storage in, 131-132
 investigatory uses of, 19-21, 120, 121-124, 134-135
 maintenance and management of, 20, 125-128
 policy options for advisability of, 32-34
 policy options for standardization for, 34-35
 population statistics in, 19, 120-121
 privacy of DNA information in, 21-23, 128-135, 136
 proposed use to locate missing children, 130-131
 recidivism as a justification for, 22, 129
 role of NCIC, 20, 125-127
 security and accountability, 127
 standardization, 14, 21, 46, 83, 124, 136
 State laws for establishing DNA, 16, 20, 122-124
 technical considerations in establishing, 124-125
 see also Computers; Privacy
- Davis, Aubrey J., 101
- Davis v. Mississippi*, 134
- Delaware
 number of DNA cases in, 15
Pennell case, 157, 160
 reported uses of DNA typing in, 16, 160
- Denmark 24, 145
- Department of Commerce (U.S.), 28, 75

- Department of Health and Human Services (U. S.)
 clinical laboratory regulation, 13, 78
 Consensus Development Program (NIH), 73
 quality assurance and performance under Medicare, 81
- Department of Justice (U.S.). See Federal Bureau of Investigation; Attorney General (U. S.)
- District of Columbia
 number of DNA cases in, 15
 reported uses of DNA typing in, 16, 160
- DNA
 composition and structure of, 3-4, 6,41-43
 sources of, 4, 15,42, 104
 variability and uniqueness of, 3,4143,59, 83
- DNA analysis. See DNA testing, terminology
- DNA databanks. See Databanks
- DNA fingerprinting. See DNA testing, terminology
- DNA identification. See DNA testing, terminology
- DNA markers
 population genetics and variation of, 7,43-44, 122
 variable number of tandem repeats, 44
 see *also* DNA; Population genetics; Restriction fragment length polymorphism; Statistics
- DNA patterns
 in murder casework 11,50,65
 in paternity casework 9,61
 in rape casework 7,50,60, 117
 revealed by multilocus probes, 47
 revealed by single-locus probes, 4, 47
 using PCR/HLA *DQx-1*, 50
- DNA prints. See DNA testing, terminology
- DNA profiling. See 20DNA testing, terminology
- DNA sequencing, 50
- DNA testing
 advantages of, 17,50, 100
 considerations for declaring a match in, 63-64
 controversies over setting standards for, 10-11, 82, 85
 courtroom use of, 14-17, 98-100, 157-172
 crime laboratories' interest in, OTA survey, 23-26,141, 144-153
 criminal investigations using, 14, 157-172
 criticisms and limitations of, 17-18, 101
 defense-initiated use of, 99-100
 equipment needs for, 143
 exclusion through, 157
 impact on murder cases of, 51-52
 impact on rape cases of, 51-52
 international uses of, 24, 145
 medically informative, 19, 37-38, 130-132
 newborn infants, 130-131
 novel applications of, 7, 51
 paternity disputes, 14,52
 quality assurance considerations for, 11-14,71-82
 reliability of, 7-8, 60, 83
 State laws addressing admissibility of, 14, 107
 surveys to assess interest in (non-OTA), 142
 terminology of OTA report, 3,41
 uses of, present and future, 6-7, 8, 50-52,53
 Validity of, 7-8, 10, 59-60, 83, 103
- DNA typing. See DNA testing
- Dotson, Gary, 119, 162
- Drug testing laboratories, Federal regulation of, 12,29,71
- Due process, 17,98, 128
- Economics. See Costs; Funding
- Einstein, Albert, 57
- Electrophoresis Society, 73, 124
- Everhart, Jeffrey L., 101
- Evidence
 biological, 96-98
 DNA as, 96-109
 DNA as exculpatory, percent by FBI laboratory, 157
 rules and standards concerning the law of, 91
 standards for admitting scientific, 91,93,95-96
 statistical, 104-105, 107
- Expert testimony
 costs of, 25, 149
 provided by FBI and commercial laboratories, 14,98
 requirements under the Frye test, 93,95
 requirements under the relevancy test, 96
 use of, 91,93
- Fair Information Practices, 127-128
- Federal Bureau of Investigation (FBI)
 cases and samples handled by, 23
 computer networks and databanks, advisory role of, 122, 125-129, 151
 criminal cases and investigations examined by, 157-172
 DNA Analysis Unit, 23-24, 143, 152
 DNA databank types proposed by, 19, 120-122
 percent suspects excluded in cases by, 157
 proficiency testing, role of, 144
 responsibilities for data files, 20,22, 127
 roles suggested by crime laboratories for, 26, 146-147
 survey of interest in DNA typing conducted by, 142
 testimony as expert witnesses, 23,98
 see *also* Forensic Science Research and Training Center; National Crime Information Center; Technical Working Group on DNA Analysis Methods
- Federal Rules of Evidence. See Relevancy test
- Federal Trade Commission (U.S.), 78
- Fifth Amendment to U.S. Constitution, 17,97-98, 135
- Finland, 24, 145
- Florida
Andrews case, 99, 108, 160
 law establishing DNA databank in, 16,20, 123
 number of DNA cases in, 15
 private access to criminal history files in, 22, 128,134
 reported uses of DNA typing in, 16, 160-162
- Forensic science
 education and training in, 76-77
 policy options for funding in, 30-32

- professional societies in, 72
- Forensic Science Associates (FSA)-California, 148-149
 - costs of services, 25, 149
 - crime laboratories contracting with, 149
 - criminal cases and investigations examined by, 157-172
 - licensing agreement with Cetus. Corp., 148
 - testimony as expert witnesses by, 98
- Forensic Science Foundation (FSF), proficiency testing program, 79
- Forensic Science Research and Training Center (FSRTC)
 - mission of, 141
 - research by, 141, 143
 - training by, 23, 143
 - validation studies of DNA testing by, 23, 143
 - Visiting Scientist Program of, 23, 143
 - see *also* Federal Bureau of Investigation
- Fourteenth Amendment to U.S. Constitution, 17,98, 128
- Fourth Amendment to U.S. Constitution, 17,98,108,135
- Frye* case, 93
- Frye, James Alfonso, 93
- Frye test, 93-95
 - advantages and drawbacks of, 95
 - comparison to relevancy test, 16, 96
- Funding
 - mechanisms by crime laboratories for DNA testing, 150
 - policy options for, 30-32
- Gander, Newfoundland, 130
- GenBank, 121
- General Accounting Office (U.S. Congress), quality assurance in drug testing laboratories, 12,71
- GeneScreen (Texas), 148
- Genetic markers, traditional, 6,41,50,83
- Genetics Society of America, 73
- Gennan Corp. (Ohio), 148
- Georgia
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 162
- Guidelines
 - TWGDAM, 74
 - voluntary professional, 72-73
- Hardy-Weinberg equilibrium, 67
- Hawaii
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 162
- Health Care Finance Administration (HCFA), clinical laboratory regulation, 13,78
- Holmes, Justice, 57
- Houston, Cpl. Carl, 130
- Human Gene Mapping Library (HGML), 121
- Human Genetic Mutant Cell Repository, 121
- Human Genome Mapping Project
 - computer spin-off technologies from, 113, 117
 - identification of loci for DNA sequencing from, 50
- Human leukocyte antigen (HLA)--HLA *DQ α -I*
 - casework using, 50
 - discrimination power of, 48
 - PCR examination at, 48-49
- Idaho
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 162
- Illinois
 - Dotson* case, 119, 162
 - law establishing DNA databank in, 16,20, 123
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 162
- Imperial Chemical Industries PLC (United Kingdom), 148
- India, 24, 145
- Indiana
 - Hopkins case*, 142, 162
 - number of DNA cases in, 15
 - proposed law establishing DNA databank in, 16, 20, 124
 - reported uses of DNA typing in, 16, 162-163
- International Association of Chiefs of Police, 125-126
- International Electrophoresis Society, 124
- International Society for Forensic Haemogenetics (ISFH), quality assurance guidelines of, 72
- Interstate Identification Index (Triple 1)-NCIC, 22, 125
- Iowa
 - law establishing DNA databank in, 16,20, 123
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 163
- Ireland, 24, 145
- Israel, 24, 145
- Italy, 24, 145
- Jack, Melanie, 100
- Japan, 24, 145
- Jeffreys, Alec, 148
- Joint Commission on Accreditation of Healthcare Organizations, clinical laboratory regulation, 13,77,78
- “Junk” DNA, 19,38, 131-132
- Kansas
 - Mosley case*, 100
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 163
- Kentucky, number of DNA cases in, 15
- Korea, Republic of, 24, 145
- Law Enforcement Assistance Administration, 144
- Law Enforcement Standards Laboratory (National Institute of Justice), 75
- Legislation
 - State admissibility of DNA tests, 14, 107
 - State DNA databanking, 16, 19,20, 122-124

- Leicester case, 8, 134-135, 148
- Licensing
 of personnel, 74-76
 of facilities, 77
- Lifebank Inc. (New York), 131
- Lifecodes, Corp. (New York), 149
 costs of services, 25, 149
 crime laboratories contracting with, 149
 criminal cases and investigations examined by, 157-172
 testimony as expert witnesses by, 98
- Louisiana
 law addressing the admissibility of DNA in, 14, 107
 number of DNA cases in, 15
 reported uses of DNA typing in, 16, 163
- Maine
McLeod case, 157, 163
 number of DNA cases in, 15
 reported uses of DNA typing in, 16, 163
- Marine Corps (U. S.)
 reported use of DNA typing in, 172
see also Military
- Maryland
 clinical laboratory licensing in molecular biology, 75-76
Cobey case, 108, 163
 law addressing the admissibility of DNA in, 14, 107
 number of DNA cases in, 15
 reported uses of DNA typing in, 16, 163-164
- Massachusetts
 number of DNA cases in, 15
 private access to criminal history files in, 22, 128, 134
 proposed law establishing DNA databank in, 16, 20, 124
 reported uses of DNA typing in, 16, 164
- Match (DNA patterns), considerations for declaring and reporting, 63-66
- Mays, Kimberly, 131
- Mays, Robert, 131
- Mendel, Gregor, 41
- Michigan
 number of DNA cases in, 15
 proposed law establishing DNA databank in, 16, 20, 124
 reported uses of DNA typing in, 16, 164
- Military **(Us.)**
 number of DNA cases in, 15
 potential use of DNA typing and DNA databanks by, 130
 reported uses of DNA typing in, 157, 172
- Minnesota
 law addressing the admissibility of DNA in, 14, 107
 law establishing DNA databank in, 16,20, 123
 number of DNA cases in, 15
 reported uses of DNA typing in, 16, 164-165
- Schwartz case*, 105, 108, 157, 165
 statistical evidence in, 105, 107
- Mississippi
 number of DNA cases in, 15
 reported uses of DNA typing in, 16, 165
- Missouri
 number of DNA cases in, 15
 reported uses of DNA typing in, 16, 165
- Mitochondrial DNA (mtDNA), 51
- Moennsens, Andre A., 89
- Montana
 number of DNA cases in, 15
 reported uses of DNA typing in, 16, 165
- Mosley, Johnny D., 100
- Multilocus probes, 68-69
 patterns revealed by, 47
 population genetics of, 69
- Murder
 DNA patterns from actual cases of, 11,50,65
 impact of DNA on, 17, 51
 incidents reported (1988), 17, 51
 recidivism statistics for, 22, 129
- National Academy of Sciences, 28,73
- National Association of Criminal Defense Lawyers, 73
- National College of District Attorneys, 73
- National Conference of Commissioners on Uniform State Laws, role in quality assurance of, 27
- National Crime Information Center (NCIC)
 DNA information, policy of, 126-127
 DNA profiles indexed in, 20, 125
 records held by, 125
 role in exchanging criminal history information, 125-127
 safeguards for databanks of, 22, 134
- National District Attorneys' Association, 126
- National Institute of Justice (NIJ), 31-32,73,75
- National Institute of Standards and Technology (NIST),
 role in quality assurance of, 28-29, 75
- National Institutes of Health (NIH)
 Consensus Development program, 28,73-74
 FBI joint project with, 141
 Recombinant DNA Advisory Committee, monitoring DNA technologies, 13, 81
- National Law Enforcement Telecommunications System (NLETS), 20,125
- National Probation and Parole Association, 126
- National Sheriffs' Association, 126
- Nebraska, number of DNA cases in, 15
- Negligence litigation, 76
- Netherlands, the, 24, 145
- Nevada
 law addressing the admissibility of DNA in, 14, 107
 law establishing DNA databank in, 16,20, 123-124
 number of DNA cases in, 15
- New Hampshire

- number of DNA cases in, 15
- reported uses of DNA typing in, 16, 165
- New Jersey
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 165
- New Mexico
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 166
- New York
 - Castro* case, 103, 157, 166
 - Forensic DNA Analysis Panel, 152
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 166-167
- New Zealand, 24, 145
- North Carolina
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 167
- North Dakota, number of DNA cases in, 15
- Norway, 24, 145

- Office of Technology Assessment (OTA)
 - findings on validity and reliability of DNA tests by, 7-8, 59-60
 - instrument for survey by, 173-178
 - reports on human genetics and biotechnology by, 41
 - results of survey of crime laboratories, 23-26, 129, 141, 144-153
- Ohio
 - number of DNA cases in, 15
 - proposed law establishing DNA databank in, 16, 20, 124
 - reported uses of DNA typing in, 16, 167-168
- Oklahoma
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 168
- Olmstead v. United States*, 111
- On-Line Mendelian Inheritance in Man (OMIM), 121
- Oregon
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 168

- Paternity cases, 99
 - child support enforcement, 52
 - cost savings to court in, 52
 - DNA patterns from, 9, 61
 - number of facilities handling, 52
- Pennsylvania
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 168-169
- Pitchfork case, 8, 134-135
- Poland, 24, 145
- Policy, issues and options for Congress, 26-38
- Polymerase chain reaction (PCR)
 - amplification of DNA using, 4, 47-50, 69-71
 - computer technologies used with, 117-118
 - contamination as a problem of, 69-70
 - controls for, 69-71
 - HLA DQx+I amplification using, 48-50, 70-71, 119
 - misincorporation with, 70
 - mitochondrial DNA amplification using, 51
 - novel applications using, 48, 50, 51
 - population genetics considerations for, 70-71
 - possible technical standards for, 10, 69-70
 - schematic of DNA using, 6, 48
 - use in actual casework, 50, 119
 - validity and reliability, 59-60
- Ponce, Vilma, 103
- Popper, Sir Karl R., 57
- Population frequencies. See Population genetics; Statistics
- Population genetics
 - disagreement about, 10, 66
 - ethnic and racial considerations in databanks, 20-21, 37, 68, 120-122
 - interpreting DNA test results using, 8-10, 62, 66-71
 - role in forensic investigations, 6, 134-135
 - validity of underlying principles applied to forensic casework, 66
 - see *also* Statistics
- Privacy, 21-23, 128-136
 - debates about storing DNA v. storing DNA test results, 21, 132-133
 - medically informative DNA tests, 21-22, 37-38, 130-132
 - personal information and, 128
 - policy options to address issues in, 35-38
 - regulations by NCIC to ensure, 22, 134
- Privacy Act of 1974
 - Code of Fair Information Practices as a model for, 127
 - exemptions for criminal justice agencies, 22, 128, 134
 - protection of information in Federal databases, 22, 128
- Probes. See Multilocus probes; Single-locus probes
- Proficiency testing
 - AABB program, 79
 - controversy over availability and use of results of, 80
 - controversy over CTS-FSF program, 79
 - FBI plans for, 80
 - United Kingdom program, 79
- Protein Data Bank (PDB), 121
- Protein Identification Resource (PIR), 121

- Quality assurance, 83-85
 - clinical laboratories, 12-13, 29, 71, 75-76, 78, 80
 - costs of, 14, 79
 - drug testing laboratories, 12, 29, 71
 - Federal role in, 14-16, 73-75, 80-82
 - flexibility in programs for, 14, 79
 - mechanisms for, 11-14, 71-82
 - policy options for, 27-30
 - professional societies' role in, 12, 72-73
 - State role in, 12, 75-77
 - see *also* Regulation; Standards

- Quality control, 62,71
- Rape
DNA patterns from actual cases of, 7,50,60, 117
impact of DNA on, 17, 52, 99
incidents reported (1988), 17, 52
recidivism statistics for, 22, 129
- Recidivism, 22, 129
- Regulation
accreditation, 77-79
certification, 76-77
clinical laboratories as a model for, 12-13, 29, 71, 75-76,77,78,80
drug laboratories as a model for, 12,29,71
Federal role in, 80-82
licensing, 75-76,77
policy options for, 27-30
proficiency testing, 79-80
State role in, 75-77
see *also* Quality assurance; Standards, setting of
- Relevancy test, 14, 16-17,96
comparison to Frye test, 16, 96
expert testimony under, 96
- Reliability
increasing challenges to, 8
of DNA test results, 60
of DNA tests per se, 7-8,60
- Research, funding for forensic, 31-32
- Restriction enzymes, used by FBI and commercial laboratories, 46
- Restriction fragment length polymorphism (RFLP)
analysis and interpretation, 4,4347, 60-68
basis for, 43-44
population genetics, 66-68
see *also* Multilocus probes; Single-locus probes; Southern blotting; Variable number of tandem repeats
- Rhode Island
number of DNA cases in, 15
reported uses of DNA typing in, 16, 169
- Right to counsel, 17,98
- Schmerber v. California*, 97-98
- Schwartz, Thomas, 105
- Scientific evidence
expert testimony, 91, 93
Frye test, 93,95
relevancy test, 96
standards for admitting, 91, 93
see *also* Evidence; Statistics
- Search and seizure, 17,98, 135
Cobey case, 108
- Secret Service (U.S.), 125
- Self-incrimination, 17,97-98, 135
- Senate Committee on Labor and Human Resources (U.S.), 3
- Sessions, William S., 1, 111
- Sexual assault. See Rape
- Sheindlin, Judge Gerald, 103
- Single-locus probes
analysis and interpretation using, 44-47,60-68
computer analysis of DNA tests using, 114-117, 118
considerations for choosing, 62
controls for test using, 61,62-64
evidence size limitation for analysis with, 47
patterns revealed by, 4,47
population genetics of, 66-68
possible technical standards for, 60-66
reporting that patterns match using, 63-66
schematic using, 5,45
- Sixth Amendment to U.S. Constitution, 17,98
- Social security number (SSN), use as a national identifier, 21, 113, 115
- Society of Heredity and Evolution, 73
- South Africa, 24, 145
- South Carolina
Ford case, 89, 169
number of DNA cases in, 15
reported uses of DNA typing in, 16, 169
- South Dakota
law establishing DNA databank in, 16,20, 123-124
number of DNA cases in, 15
reported uses of DNA typing in, 16, 169
- Southern Association of Forensic Scientists, 77
- Southern blotting, 44,4647,60-61
- Spencer, Timothy W., 101, 108
- Standardization
as distinct from standards, 83
importance to crime laboratories of, 145-146
importance to DNA databanking of, 14,21,46,83,124, 136
international cooperation on, 24, 145
policy options for, 34-35
role in quality assurance of, 83
- Standards
controversies over setting, 10-11, 82, 85
crime laboratories' view of FBI role in, 25, 147
for legal admissibility of scientific evidence, 14,16-17, 91,93,95-96
for PCR, possible technical, 10,69-70
for RFLP analysis, possible technical, 10-11,60-66
operational, 10, 82
policy options for setting, 27-30
technical, 10, 82
see *also* Guidelines; Quality assurance
- Statistics
as evidence in court, 101, 104-105, 107
calculating for RFLP analysis, 67
database considerations of population, 120-122
see *also* Population genetics
- Supreme Court, U.S.
privacy of criminal history records, 134
refusal to hear appeal in *Spencer case*, 101

- ruling on congressional authority to impose conditions on funds, 81
- Sweden, 24, 145
- Switzerland, 24, 145
- T.J. Hooper, The*, 57
- Teale, Edwin Way, 39
- Technical Working Group on DNA Analysis Methods (TWGDAM)-FBI
 - computer database model of, 13, 122, 127, 144
 - members of, 144
 - quality assurance program of, 13-14, 74-75, 77, 144
 - statistics, 13
- Tennessee
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 169
- Texas
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 169-170
 - Trimboli* case, 100, 170
- Thompson, Governor James (Illinois), 162
- Thorton, John I., 139
- Training
 - policy options for funding, 31
 - education and requirements for, 76-77
- Trimboli, Ronald Stephen, 100, 170
- Triple I. See Interstate Identification Index
- Twigg, Arlena, 130-131
- Twigg case, 130-131
- Uhrig, Hal, 39, 99
- United Kingdom
 - DNA typing in, 24, 145
 - DNA's criminal debut, Leicester case, 8, 135
 - immigration case, first use in forensic context, 68
 - multilocus probe analysis in, 47, 68
 - proficiency testing in, 79
- United States v. Williams*, 89
- University of New Haven (Connecticut), survey of interest in DNA typing conducted by, 142
- Utah**
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 170-171
- Validity
 - DNA tests per se, 7-8, 59-60
 - principles of population genetics, 10, 66
- Variable number of tandem repeats (VNTR), 44
- Vermont
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 171
- Virginia
 - child support enforcement and DNA testing in, 52
 - law establishing DNA databank in, 16, 20, 123-124
 - number of DNA cases in, 15
 - onsite DNA testing in, 150-151
 - reported uses of DNA typing in, 16, 171
 - Spencer* case, 101, 108, 171
- Washington
 - law establishing DNA databank in, 16, 20, 123-124
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 171-172
- Webb, Cathleen Cromwell, 119
- West Germany, 24, 145
- West Virginia
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 172
 - Woodall* case, 108, 157, 172
- Williams, John, 39
- Wisconsin
 - number of DNA cases in, 15
 - reported uses of DNA typing in, 16, 172
- Wyoming, number of DNA cases in, 15
- Yugoslavia, 24, 145