INDEX

Academic research, see Research
Academic "subculture," 326
Accelerator, 44, 149, 302, 305
electrostatic, 22
Mk III linear, 120
particle, 131
200 Bev., 35
Advanced Research Projects Agency
(ARPA), 9, 111
Adversary procedure, 100
Advisers, see Scientific advisers
Advisory Committee on Reactor
Safeguards (ACRS), 84
Advisory committees, 81-82
functions of, 83-86
Aerospace Corporation, 315
Agricultural Extension Service, 252,
299
Agricultural research, 24, 76, 145,
296; see also Science
Agricultural studies, 31
Agriculture, 41
Department of, 65, 147, 315
in universities, 257, 299
Aircraft nuclear propulsion program
(ANP), 97, 101
Air Force, 277
Air pollution, 7; see also Pollution
Air traffic control, 7
Alvin, 305
American Academy of Arts and
Sciences, 208
Ames Atomic Energy Laboratory,
189
Amplifier terminology, 226
Apollo program, 41, 313
Applied Physics Laboratory at Johns
Hopkins, 3
Applied research, see Research
Arctic research, 123
Argonne Laboratory, 59, 189
Arms Control and Disarmament
Agency, 108
Art appreciation, 213
Astronomy
neutrino, 72
optical, 35
radio, 6, 35, 36, 132, 142, 306
Atmospheric science, 4, 47, 150
deficiencies in, 13
global circulation, 29
Atom bomb, 22, 91
Atomic Energy Act, 64
Atomic Energy Commission (AEC),
2, 8, 10, 30, 31, 32, 34, 44,
49, 64, 66, 145, 166, 187,
189, 257, 258, 297, 313
Advisory Committee on Reactor
Safeguards, 84
budget of, 178
civilian nuclear power program of,
11
General Advisory Committee
(GAC), 101
missions of, 13, 34
Atomic energy program, 5
Audio-visual aids, 230, 247
Automation, 232
Automation Commission, 263
Balance of trade in "technical
know-how," 129
Barbed wire, 313
Basic oxygen process, 268
Basic research, see Research
Battelle Memorial Institute, 316
Battery additive controversy, 87
Bayesian statistical analysis, 123
Bell, D., 66, 69
Bell Telephone Laboratories (BTL),
284, 309, 316
Ben David, L., 70
Berkeley Radiation Laboratory, see
Lawrence Radiation Labora-
tory
Bethe, H., 97
"Big science," 35, 36, 46, 50, 58,
161, 179, 192
Biochemistry, 145
Biology
evolutionary, 72
molecular, 72
see also Ecology
Bode, H. W., 323
Bohr, Nils, 72

333
INDEX

Branscomb, L., 110
Brookhaven National Laboratory, 4, 6, 135, 160, 186, 189, 316
Brookings Institution, 176
Budget
Bureau of, 44, 104, 108, 161, 310
for development, 51
science, 25, 63, 78, 127, 175
Bueche, A. M., 317, 322
Bureaucracy, advisory committees and, 82
Cabinet, U.S., 2
proposed Department of Science, 1–18
Cambridge Electron Accelerator, 134, 186
Capron, W., 40–43
Carnegie Institute of Technology, 239, 316
Chemistry
basic research and, 168
as extensive research, 287
support for, 201
Chemistry Survey Committee, 48, 189, 203
Circuitry, high-speed, 116
Civilian nuclear power, 11, 15, 34, 145
Civilian reactor technology, 67
Civil Service, 20
Climate of opinion, 52
Coastal geography, 117
Cold war, 23
Committee on Oceanography
(NASCO), 84
Committee on Science and Public Policy (COSPUP), v, 45, 50, 126, 153, 167
Common Market, European, 184
Common market of ideas, 78
Communications, 31, 293
Computers, 29
cost of, 161
erly development of, 302
high-speed, 145
jet aircraft design and, 268
learning behavior and, 250
mathematicians and, 296
as science-based industry, 293
simulated properties of, 224
usefulness of, 224
Computer technology, 28
fast pulse electronics in, 120
naval support and, 123
pattern recognition in, 116
research in, 120
software, 116
COMSAT, see Satellite
Conflict of interest, 265
Congress, U.S., 4–5, 34, 43, 268
importance of science to, 10
R and D contracts and, 27
science advisers and, 95, 101, 103
science budgets and, 7, 11, 32, 40, 161, 312
space program and, 261
Congressional Committee for Science and Technology, 7
Congressional committees, 5
Conseil National de Recherche (CNRS), 76
Consensus of advice, 99
Consulting, 274
Contract research centers, 301, 315
Control systems, 222
adaptive, 250
“optimization” in, 226
Copyright policy, 265
Customer sophistication, 272
Cyclotron, 22
Darwin, C., 216, 288
Darwinian evolution, 251
Deep sound channel, 117
Defense Science Board, 82, 84, 92–93
Department of Agriculture (DOA), 65, 147, 315
Department of Commerce, 147, 262
space program and, 67
Department of Defense, 2–3, 82, 117, 182, 264, 315
basic research in, 130
missions of, 13
Department of Health, Education, and Welfare (HEW), 65
Entrepreneurship, 271
Environmental science, 28, 29, 33, 66, 216
European Common Market, 244
Evidence, limitations of, 210
Executive branch, 5, 7, 44
Executive Office, 1, 31, 43, 89; see also President, U.S.
Executive privilege, 101, 102
Export market, 27

Faraday, M., 304
Federal agencies, 2
Advanced Research Projects
Agency, 9
Atomic Energy Commission (AEC), 2, 8, 10, 11, 13, 30, 31, 32, 34, 44, 49, 64, 66, 84, 101, 145, 166, 178, 187, 189, 257, 258, 297, 313
duplication of effort in, 11
mission of, 6, 7, 10, 17
monopoly in, 12
National Aeronautics and Space Administration (NASA), 2, 6, 9, 30, 31, 32, 36, 41, 44, 48, 64, 66, 84, 108, 131, 145, 166, 257, 264, 276, 313
National Institutes of Health (NIH), 2, 7, 24, 48, 49, 85, 86, 167
National Science Foundation (NSF), 2, 3, 4, 9, 12, 24, 25, 32, 36, 38, 39, 42, 43, 46, 49, 63, 64, 77, 85, 111, 131, 144, 147, 159, 163, 167, 178, 182, 187, 202, 254, 258, 276
Office of Army Research, 9
Office of Naval Research, 8, 110, 111, 117, 120, 122–124
Office of Science and Technology, 14, 103, 108
Office of Scientific Research, 8
Office of Special Assistant to the President, 14, 94, 109
operating responsibilities of, 10

Department of the Interior, 147
Department of Science, proposed, 1, 2–18, 25
conflict of priorities and, 8
Congress and, 4–5
interagency programs of, 4
Secretary of Science, 3
Development, 45, 46, 51, 178
Director of Defense Research and Engineering (DDRE), 101
Disarmament, 106; see also Nuclear-test-ban treaty
Disciplinary categorization, 45, 67, 178–184
Discipline
hybrid, 47
scientific, 179
Discourse of experts, 210
Distant Early Warning (DEW) line, 123
DNA molecule, 228
Documentation, 328
Drucker, P. F., 307
Dynamic equilibrium, 217
Ecology, 216
Educated aesthetic taste, 213
Education
adult, 238–240
as applied science, 245–252
challenge of, 230–233
for complex world, 244–245
productivity of teachers, 236
scientific, 7
see also Graduate education
Educational level of country, 230
Einstein theory of relativity, 128, 218
Eisenhower, President D. D., 103
Eisenhower Administration, 102
Electronics, 120
Elementary-particle physics, 72, 115, 122, 180, 215
Energy, 220
Engineering
applications, 275
obsolescence of personnel, 239
societies, 239, 253
Engineers Joint Council, 230

INDEX 335
Grants
coherent area, 165
development and, 198
fellowships, 165
institutional, 165, 108
project, 74, 75, 76, 82, 165
Green Bank Radio Astronomy Observatory, 135, 171, 316
Gross National Product (GNP), 61, 77, 212, 268
Guidance and control technology, 118
Heisenberg Uncertainty Principle, 219
High-energy physics, see Physics
High-vacuum techniques, 72
Hindsight project, 122, 291, 322
Holloman, J. H., 230
Human values, 211
Hydrodynamics, 116

Independent agencies, 34
Indian, American, 243
Induced demand, see Federal support
Industrial Revolution, 293
Industry, science-based, 264, 266, 274, 293
Information technology, 182
Information theory, 220, 227
Innovation, 320
Innovative spirit, 324
Institute of Defense Analyses, 24, 315
Instrumentation, 267
Intellectual freedom, 312
"Intellectual size," 301
Interagency programs, 4, 8
Intercontinental Ballistic Missile (ICBM), 124
Interdisciplinary activities, 191
Intermediate degree, 205
International Geophysical Year (IGY), 43, 86
International Indian Ocean Expedition, 43
International programs, 37, 78
International research centers, 78

universities and, 9
Federal contract research centers, 45
Federal Council for Science and Technology (FCST), 8, 14, 84, 94, 108
Federal missions, 114; see also Missions
Federal science policy influence on private sector, 262
scientific community and, 13
Federal support conflict of interest and, 104, 107
development and, 178
development in, 45
gerographical distribution of, 75
induced demand in, 27, 73
solid-state research and, 120
Feedback systems
response in, 223, 226
stability in, 223, 226
theme in science, 220, 222
Fellowships, 165, 203
Fermi, E., 149
Fleet air defense system, 124
Foreign trade, 260
Forrester, J. W., 222
Freud’s psychoanalytical theory, 212

Genetics, 20
Geological Survey, 21
Geophysical navigation, 124
Geophysics, 13
Gibbs, J. W., 294
G.I. Bill, 231, 326
Gilpin, R., 81
Godpin, R., 330
Governmental agencies, see Federal agencies
Graduate education. 64
applied research and, 148
basic research and, 148
decentralization of, 197
D.Sc. degree, 152
gerographical distribution of funds and, 156
intermediate degree, 155
in science, 36
tax incentives and, 155
Invention, 314
“Invisible hand” argument, 260
Jet aircraft, 268
Jet Propulsion Laboratory (JPL) at California Institute of Technology, 316
Johns Hopkins Applied Physics Laboratory, 3
Johnson, H. G., 70
Joint Chiefs of Staff (JCS), 98
Joint Services Electronics Program (JSEP), 118
Kennedy, President J. F., 103
Kennedy Administration, 1
Killian, J. R., 101
Kistiakowsky, G. B., 98, 126, 161, 170
Kitt Peak National Observatory (KPNO), 135, 160, 171, 186
Klystrons, 116, 120, 302
Laboratories
  age structure of, 324
  civil service, 315, 318
  “corporate,” 63
  government, 321
  inhouse, 49
  mission-oriented, 315-325
  national, 49, 173
Laissez-faire
  approach to science, 60
  justification of, 216
Lamont Geological Observatory, 117
Langmuir, I., 287
Laplace, P. S., 209, 219
Laser, 113, 302, 309
Laski, H., 89, 98
“Latter hole,” 96
Lawrence Radiation Laboratory, 117, 134, 186, 189
Learning, process of, 223, 227
  programmed, 248, 251
  psychological processes in, 247
  “Learning curve,” 267
Leghorn, R., 254
Leontief, W., 268
Limited war, 313
Linac, 120
Lincoln Laboratory, 4, 135, 315
“Listening-post” activity, 119
Little, Arthur D. Company (ADL), 316
“Little science,” 36, 50, 58, 158, 179, 186
Livermore Radiation Laboratory, 186, 315
Lockean theory, 212
Los Alamos Scientific Laboratory (LASL), 134, 315
Lumsdaine, A. A., 246
Manhattan Project, 91
Mariner probe, see Mars probe
Maritime Administration (MARAD), 67
Market mechanism, 68
Mars probe, 45, 57, 179
Marxist view, 60, 215
Maser, 113, 302
Massachusetts Institute of Technology, 264
  Radiation Laboratory, 91
Materials Advisory Board, 291
Mathematics
  progress of, 141
  support for, 201
Max Planck Institutes, 59, 76
Medical care, 38, 256
Medical research, see Research
Michelson-Morley experiment, 128
Microplankton, 124
Microwave components, 118, 120
Military problems, scientists and, 22
Military training, 240
Mission-oriented agencies, 16, 21, 32, 42, 67, 77
  basic research and, 114, 122
  Congress and, 144
  role of, 111
  science policy and, 19, 36, 49, 64, 65, 66, 74
  vertical integration and, 256
Mission relevance, 112, 114, 146, 147
Missions, 21
  agency, 29, 30, 31
Missions (continued)
allocation of resources and, 56
federal, 28, 114
research and, 118
social, 182; see also Social goals
Mohole project, 45, 161, 179, 305
Moly alloys, 123
“Multiversities,” 190
Music appreciation, 213

National Academy of Sciences, v, 31, 87, 94, 126, 153, 167, 182, 188, 204
battery additive controversy and, 87
Chemistry Survey Committee, 48, 189, 203
Committee on Oceanography, 84
Committee on Science and Public Policy (COSPUP), v, 45, 50, 126, 153, 167
National Research Council of, 24
Physics Survey Committee, 48, 182, 188, 197, 205
National Advisory Committee on Aeronautics (NACA), 24, 25, 30, 145, 276
National Aeronautics and Space Administration (NASA), 2, 6, 9, 30, 31, 32, 36, 41, 44, 48, 64, 66, 84, 108, 131, 145, 166, 257, 264, 276, 313, 315
National Bureau of Standards, 4, 6, 21, 147
investigation of, 87
National Center for Atmospheric Research, 186
National Institutes of Health (NIH), 2, 7, 24, 48, 49, 85, 86, 167
Congress and, 5, 11
university research and, 136
National Planning Association (NPA), 254
National Radio Astronomy Observatory, 135, 171, 316
National Research Council, 291
National Science Board, v, 103

National Science Foundation (NSF), 2, 3, 4, 9, 12, 24, 25, 32, 36, 38, 39, 42, 43, 46, 49, 63, 64, 77, 85, 111, 131, 144, 147, 159, 163, 167, 178, 182, 187, 202, 254, 258, 276
National security, 93, 312
National Register, 197
Natural resources, 20
development of, 29
National Academy study of, 84
Natural selection theory, 215, 216, 251
Naval Ordnance Test Station, 3
Naval Research Laboratory, 3, 4, 6
Navy, United States, 3, 110–125
basic research and, 116, 110–125
mission of, 116
Negro, 243
Newton, I., 71
Newtonian mechanics, 214
Noise, 228, 229
Nose-cone material, 124
Nuclear energy fields, 266
Nuclear physics, 88, 120, 121, 122, 201, 306; see also Physics
high-energy, 4, 35, 59, 78, 84, 162, 178, 287
low-energy, 132
after World War II, 22
Nuclear power, 85, 298, 314
civilian, 11, 15, 34, 145
plants, 297
Nuclear propulsion
for military purposes, 30
national investment in, 311
Nuclear research, 120
Nuclear resonance spectrometer (NMR), 302
Nuclear-test-ban treaty, 310
eyear days of, 95
scientific advisers and, 83
test cessation, 85
underground tests, 96
Nuclear weapons, 34
Oak Ridge National Laboratory (ORNL), 189, 316
Oceanography, 4, 6, 26, 31, 32, 33, 35, 47, 150, 182
coastal geography, 117
deep sound channel, 117, 124
deficiencies in, 13
exploitation of oceans, 26
federal budget for, 131, 132, 183
forecasting of waves, 123
marine farming, 66
as multidisciplinary study, 179
oceanic circulation, 29
Oceanographic vessels, 44, 161
Office of Army Research, 9
Office of Education, 235, 249
Office of Naval Research (ONR), 8, 110, 111, 117, 120
history of science and, 122–124
Office of Science and Technology, 14, 103, 108
Office of Scientific Research, 8
Operating responsibilities, 10
Operations research, 87
Optical astronomy, 35, 142
Oppenheimer, J. R., 101
Organization for Economic Co-operation and Development (OECD), 128
“Organizational memory,” 319, 322
Oscilloscopes, 120
Panel on High-Energy Physics, 84
Pasteur, L., 285
Patent policy, 265, 274
Pharmaceuticals, 293
Photomultiplier tubes, 121
Physical Science Study Committee (PSSC), 237
Physicists, policy thinking of, 23
Physics
elementary-particle, 72, 115, 122, 180, 215
high-energy, 35, 59, 78, 162, 178, 287
key ideas of, 218
nuclear-structure, 183
research in, 22
solid-state, 144, 192, 287
theoretical, 141
Physics Survey Committee, 48, 182, 188, 197, 205
Planning
multidimensional, 49
of science, 26–80, 176
Plastic cornea, 124
Polanyi, M., 60, 76
Polaris program, 123
Pollution
alleviation of, 260
environmental, 26, 38, 51
federal responsibility and, 29
study of, 31
Port logistics, 117
President, U.S., 2, 34, 100, 102; see also Executive office
President’s Science Advisory Committee (PSAC), v, 14, 33, 91, 92, 93, 94, 97, 98, 101, 103, 104, 107
Panel on High-Energy Physics, 84
Pressey, S. L., 247
Price, Congressman M., 97, 98
Price, D., 60, 61, 72, 76, 77
“Principal investigators,” 74; see also Project grant system
Priorities
conflict of, 8
within research, 48, 50
Production technology, 212
Project grant system, 74, 75, 76, 82, 165
proposal pressure, 76
Proximity fuse, 22
Public Health Service, 3
Quantum mechanics, 214
Quantum physics, 71
Quantum theory, 209, 214, 219
Quasars, 72
Rabi, I. I., 95
Radar
development of, 22
modern high-power, 120
nuclear weapons and, 149
Radioactive isotopes, 65
Radio astronomy, 6, 35, 36, 132, 142, 306
Radiochemistry, 149
Radiography, industrial, 120
Radio navigation, 118, 123
Ramo, S., 245, 249
RAND Corporation, 88, 315
Reactor technology, 67
Redtenbacher, F., 293, 294, 307
Relativity, 218, 219; see also Einstein theory
Reorganization Plan No. 2, 103, 108
Research
academic, vi, 38
in the aggregate, 188
classification for, 179
definition of, 58
demographic requirement of, 154
forward planning for, 199
future support for, 127, 134
graduate students and, 45, 205
mission-oriented, 186
pluralistic decision-making, 196
policy for, 191–198
resource allocation problem and, 186
selectivity in, 203
support for, 63–64, 77
academic basic, 175
agricultural, 24, 76, 145, 296
applied, 15, 24, 39, 45, 46, 51
basic issues and, 308–310
basic research and, 282
functions of, 138
fundamentality of, 179
future support for, 131
government and, 296–303
industry and, 296–303
judging of, 328
universities and, 296–303
basic, 14, 15, 16, 19, 21, 22, 23, 24, 45, 46
academic research and, 196
cultural function of, 138–142
definition of, 286
economic function of, 143–145
educational function of, 148–159
functions of, 138–159
future support for, 132, 133
implications of, 119
mission-oriented agencies and, 112
mission-oriented laboratories and, 325
national goals and, 187
“oriented,” 283
resource-allocation system for, 160
social function of, 145–148
in universities, 265
categorization of, 56–59, 184, 285
contracts and grants and, 82
development projects and, 15
education and, 69
extensive, 287
fundamental, 46, 185
independent, 173, 266
institutional, 46, 171–175
intensive, 287
intramural, 272
“listening-post” approach to, 119
medical, 22, 28
nonacademic, 57; see also Mission-oriented agencies
objective of, 208
research on, 289–296
under security classification, 301
thermonuclear, 206
university, 148–159, 299
criteria for support of, 159–171
federal contributions to, 137
Research and development contracts, 24
Congress and, 27
evolution of, 23
priorities in, 48
regional growth and, 27
Research proposals, 200
Research support
in biochemistry, 120
computers and, 120
“hidden,” 144
indirect public, 140
Research support (continued)
  maintenance of growing points, 207
  tax incentives and, 155
Reuss, Congressman H., 40, 43
“Revolution of rising expectations,” 244
Rickover, Adm. H. G., 330
Rutherford, E., 72
Sandia Corporation, 316
Satellite, 29
  communications, 67
  surveillance, 67
  weather, 31
Science
  academic, 19
    nonfederal contribution to, 155
  agricultural, 6, 20
  applied, 5, 20, 34, 38, 53
    education as, 245-252
    status in United States, 325
  art and, 209
  atmospheric, 4, 47, 150
  basic, 35, 44, 53
    planning for, 176, 177
    budget for, see Budget
categorizations of, 178-184
  central planning for, 18
  as consumer good, 60, 70
  cultural climate and, 215
development of, 16
  “the endless frontier,” 3
  environmental, 28, 29, 33, 66, 216
  fundamental, 5
government and, 210
  graduate education in, 36; see also Education
  human values and, 211
  institutional, 59
  life, 6, 28
  long-range planning for, 18
  management of, 18
  multidimensional character of, 177
  physical, 6
  planning of, 26-80, 176
  proposed Department of, 1-18
  social goals and, 59
  as social overhead investment, 59-60, 68, 74
  society and, 79
  “space,” 6
  technology and, 28, 53, 303-308
  interdependence of, 28, 30
  university, 74
  utilization of, 18, 51
Science policy, 79
  federal, 13, 259
  national, 19, 254
Scientific advisers, 81-109
  code of ethics and, 107
  conflict of interest and, 107
  consensus among, 99
  roles of, 86-89
  selection of, 91-92
Scientific American, 295
Scientific community, 12, 214
  federal science policy and, 13, 24, 26
  growth of research and, 176
  in postwar America, 23
  program officers and, 17
  world, 14, 30
  World War II and, 22
Scientific discipline, 12, 54, 179, 191
Scientific education, 7
Scientific goals, 55
  consensus regarding, 259
  peer judgments in, 55
  societal judgments in, 55
Scientific information, 7
Scientific metaphor, 221, 223
  psychological phenomena and, 221
  social phenomena and, 221, 229
Scientific method, 208
Scientific popularizers, 217
Scientific theory, 214
Scientists
  the military and, 22
  mobility of, 327
  national security and, 93
  naval, 125
  in the White House, 25
Secondary goals, 41
Secretary of Science, proposed, 3
Security classification, 301
Semiconductors, 288
"Serendipity," 308
Shannon, C., 227, 296
Shimshoni, D., 254
Shockley, W., 330
Shock tubes, 124
Signal detection methods, 118
Skinner, B. F., 247
Smith, C. S., 308
Snow, C. P., 88
Social goals, 64
Social problems, 38
Social purpose, see Missions
Smithsonian Institution, 21, 316
Solid-state research, 144, 285; see also Physics
Space, exploration of, 6, 47, 150
Space Administration, 13
Space program, 5, 67, 114, 133, 138, 266
independent research and, 266
mission of, 181
Space systems, 15
Space technology, 261
Space vehicles, 44
Special Assistant to the President, 14, 94, 109
under Eisenhower Administration, 102
for Science and Technology, 93
status of, 103
Specialization, 28
Spectroscopy
atomic, 47
molecular, 47
Spin-off, 271, 299
Sputnik, 25
Stanford Research Institute, 316
Stelson, T. E., 239
Suits, C. G., 317, 322
Sumner, W. G., 216
Support
basic science, 12, 13
criteria for, 125
diversity of, 17
imbalance in, 13
Systems approach, 28, 38
Szilard, L., 227
Talent, development of, 69
Taste
educated, 213
main elements of, 215
Teaching
as an art, 246
machine, 223, 230, 247
Team research, 36
Technical feasibility, 16
Technical information, 265
Technical overhead, 41, 59, 79
Technical resources, misallocation of, 38
Technological application, 55
Technological entrepreneur, 330
Technological judgments, 310-315
Technological surprise, 115
Technology
computer, 28
long-range planning for, 18
science and, 28, 30, 53, 303-308
Technology transfer, 254
government and, 259-268
graduate students and, 274
horizontal, 255, 265, 271
innovation and, 254
kinds of, 255-259
mechanisms for, 269-277
underdeveloped countries and, 256
vertical, 255, 256, 265, 317
Telescopes, big, 22
Teller, E., 169, 330
Time lag, social decision and, 225
Titanium, 123
Toilmin, S., 71
Traineeships, 203
Transformation concept, 220
Transistor, 144, 284
Transportation
national development of, 26
research in, 57
urban, 7, 38
Underdeveloped countries, 232, 241-244
technological transfer and, 256
Underground tests, 96

Universities
  basic science and, 13
  federal agencies and, 9
  function of, 190
  interdisciplinary activities of, 191
  land-grant, 21, 257, 326
  mobility in, 324
  "multiversities," 190
  solid-state research and, 120
  research in, 36; see also Research standards in, 145, 191

Urban development, 26
  federal responsibility and, 29

Urban transportation, 7, 38, 260

Van Allen belt, 123
Von Neumann, J., 149, 296

Water pollution, 7
Water resources, 38
Weapons System Evaluation Group, 88
Weather Bureau, 31
Weather forecasting, 124
Weather modification, 26, 29, 39, 66, 68

Weinberg, A. M., 41, 42, 43, 62, 63, 64, 66, 77, 113, 162, 172, 199
Weisskopf, V. F., 287
Westheimer, F. H., 76
Weyl, F. J., 110
White House, 89; see also Executive Office and President
Whittle, F., 330
Wiener, N., 296
Wiesner, J. B., 1
Woods Hole Oceanographic Institution (WHOI), 186, 316

World War II
  fear of inflation following, 225
  Hitler menace, 22
  new technologies since, 305
  operations research and, 87
  planning for science since, 176
  research activity and, 59
  research activity since, 81
  science support and, 21
Wright, C., 81

York, H. F., 101

Zone-refining, 284