

# Illustrations

2.1	Procedure for extracting genetics subset from multidisciplinary data base.	14
2.2	Growth of <i>Science Citation Index</i> over the years.	17
3.1	Distribution of citations among journals cited in <i>SCI</i> .	22
3.2	Distribution of published items among source journals covered by <i>SCI</i> .	22
3.3	Distribution of references among source journals covered by <i>SCI</i> .	23
3.4	Computer-processing operations in the production of <i>Science Citation Index</i> .	28
3.5	Typical entry from the <i>Citation Index</i> of <i>SCI</i> .	33
3.6	Typical entry from the <i>Source Index</i> of <i>SCI</i> .	34
3.7	Typical entry from the <i>Patent Index</i> of <i>SCI</i> .	34
3.8	Typical entry from the <i>Permuterm Subject Index</i> of <i>SCI</i> .	35
3.9	Typical entry from the <i>Corporate Index</i> of <i>SCI</i> .	36
5.1	Eponymic search.	44
5.2	Methodology search.	47
5.3	Reaction followup search.	47
5.4	Compound followup search.	48
5.5	Concept search.	50
5.6	Specific-question search	52
5.7	Overt multidisciplinary search.	53
5.8	Covert multidisciplinary search.	54
5.9	Quick state-of-the-art search.	57
5.10	Development-of-bibliography search.	59
6.1	Nobel Prize winners since 1950	65
6.2	Nobel Prizes and memberships in national academies of science among the 250 most-cited primary authors from 1961 to 1975.	67
6.3	Historiograph of DNA development.	74
6.4	1972 biomedical clusters.	76
6.5	<i>FSH and LH releasing hormone</i> cluster in 1972.	77
6.6	Major biomedical clusters in 1972 and 1973.	78
7.1	Citation network of the development of nucleic-acid staining.	82
7.2	Flowchart of major tasks in DNA-history study.	83
7.3	Network diagram of DNA-theory development as defined by I Asimov.	84
7.4	Excerpt of <i>Nodal Citation Index</i> from DNA-history study.	87
7.5	Network diagram of DNA-theory development as defined by citation analysis.	88
7.6	Historiograph of the major advances in genetics between 1958 and 1967.	94
7.7	Bibliography of nodal papers in genetics 1958-1967 historiograph.	95
8.1	Functional diagram of co-citation clustering method.	101
8.2	Co-citation pairs that qualified for clustering.	103
8.3	Distribution of clusters by number of cited documents.	103

8.4	Ten largest clusters at level 3.	104
8.5	Block diagram of <i>nuclear physics</i> cluster.	106
8.6	Block diagram of <i>particle physics</i> cluster.	107
8.7	Word profiles of <i>nuclear physics</i> cluster.	108
8.8	Word profiles of <i>particle physics</i> cluster.	109
8.9	Methodology of mapping specialties.	112
8.10	Network diagram of level 3 clusters.	113
8.11	Description of level 3 clusters.	114
8.12	Spatial display of <i>bio-medicine</i> methods papers.	116
8.13	Network diagram of major <i>biomedicine</i> specialty clusters.	117
8.14	Description of <i>biomedicine</i> specialty clusters.	117
8.15	Spatial diagram of <i>cancer research, reverse transcription</i> macrocluster.	119
8.16	Map of 1972 biomedical clusters	120
8.17	Map of 1973 biomedical clusters.	121
8.18	Map of major natural science disciplinary clusters.	122
8.19	Contour map of 1970 <i>collagen</i> cluster.	124
8.20	Contour map of 1971 <i>collagen</i> cluster.	125
8.21	Contour map of 1972 <i>collagen</i> cluster.	126
8.22	Contour map of 1973 <i>collagen</i> cluster.	127
8.23	Contour map of 1974 <i>collagen</i> cluster.	128
8.24	Bibliography of documents in <i>collagen</i> clusters.	128
8.25	Stability index for <i>collagen</i> cluster.	131
8.26	Responses to question about important advances in collagen research.	132
8.27	Responses to question about important papers in collagen research.	133
8.28	Responses to question about leading investigators in collagen research.	133
8.29	Responses to question about conceptual shifts in collagen research.	134
8.30	Map of social science clusters.	138
8.31	Two-dimensional plot of largest social science clusters.	140
8.32	Block diagram of <i>free recall</i> cluster.	141
8.33	Spatial diagram of <i>memory and learning</i> macrocluster.	142
8.34	List of social science documents cited at least 200 times between 1972-1974.	143
9.1	<i>Journal Citation Reports (JCR) Journal Ranking Package, Section 1.</i>	151
9.2	<i>Journal Citation Reports (JCR) Journal Ranking Package, Section 2.</i>	152
9.3	<i>Journal Citation Reports (JCR) Journal Ranking Package, Section 3.</i>	152
9.4	<i>Journal Citation Reports (JCR) Journal Ranking Package, Section 4.</i>	152
9.5	<i>Journal Citation Reports (JCR) Journal Ranking Package, Section 5.</i>	153
9.6	<i>Journal Citation Reports (JCR) Journal Ranking Package, Section 6.</i>	153
9.7	<i>Journal Citation Reports (JCR) Citing Journal Package.</i>	155
9.8	<i>Journal Citation Reports (JCR) Cited Journal Package.</i>	157
9.9	Distribution of citations among cited journals.	158
9.10	The 152 most frequently cited journals.	159
9.11	Journals most highly cited in 1974.	161
9.12	Journals cited most frequently by <i>Journal of the American Chemical Society.</i>	164
9.13	Journals cited most frequently by <i>Biochemistry.</i>	165
9.14	Journals cited most frequently by <i>Journal of Chemical Physics.</i>	166
9.15	Journals cited most frequently by <i>Journal of Experimental Medicine.</i>	168
9.16	Major sources of references to <i>Journal of Experimental Medicine.</i>	168
9.17	Journals cited most frequently by <i>Journal of Immunology.</i>	169

9.18 Major sources of references to <i>Journal of Immunology</i> .	169
9.19 Journals cited most frequently by <i>Annals of Rheumatic Diseases</i> and <i>Arthritis &amp; Rheumatism</i> .	171
9.20 Major sources of references to <i>Annals of Rheumatic Diseases</i> and <i>Arthritis &amp; Rheumatism</i> .	172
9.21 Journals cited most frequently by <i>Phytopathology</i> .	173
9.22 Major sources of references to <i>Phytopathology</i> .	173
9.23 Journals cited most frequently by <i>Acta Pathologica et Microbiologica Scandinavica</i> .	174
9.24 Journals cited most frequently by <i>Pathologie Biologie</i> .	174
9.25 Journals cited most frequently by <i>Journal of Clinical Investigation</i> .	176
9.26 Major sources of references to <i>Journal of Clinical Investigation</i> .	177
9.27 Journals cited most frequently by <i>Journal of the American Medical Association</i> .	179
9.28 Journals cited most frequently by <i>New England Journal of Medicine</i> .	180
9.29 Pediatric journals among the 1000 most highly cited journals.	181
9.30 Journals cited most frequently by the highly cited pediatric journals.	182
9.31 Highly cited journals in geology and geophysics.	184
9.32 Major sources of references to <i>Journal of Geophysical Research</i> .	185
9.33 Journals cited most frequently by <i>Journal of Geophysical Research</i> .	186
9.34 Journals cited most frequently by <i>Acta Crystallographica</i> .	187
9.35 Major sources of references to <i>Acta Crystallographica</i> .	188
9.36 Fifty journals cited most frequently by 188 physics journals.	189
9.37 Fifty journals ranked by ratio of "physics" citations received to total citations received.	191
9.38 Journals cited most frequently by 16 cancer journals.	193
9.39 Major sources of references to 16 cancer journals.	194
9.40 Major sources of references to botany journals.	195
9.41 Journals cited most frequently by botany journals.	196
9.42 Journals ranked by "botanical impact."	197
9.43 Major sources of references to psychology journals.	199
9.44 Journals cited most frequently by psychology journals.	200
9.45 Journals cited most frequently by psychology journals ranked by "psychology impact."	201
9.46 Journals cited most frequently by agricultural journals.	203
9.47 Major sources of references to agricultural journals.	204
9.48 Journals cited most frequently by engineering journals.	206
9.49 Major sources of references to engineering journals.	207
9.50 Major sources of references to Russian journals in 1972.	209
9.51 Journals cited most frequently by Russian journals in 1972.	211
9.52 Major sources of references to Russian journals in 1974.	214
9.53 Journals cited most frequently by Russian journals in 1974.	216
9.54 Major sources of references to Russian journals in 1969.	218
9.55 Journals cited most frequently by Russian journals in 1969.	220
9.56 Journals cited most frequently by French journals.	225
9.57 Major sources of references to French journals.	226
9.58 Journals cited most frequently by Japanese journals.	228
9.59 Major sources of references to Japanese journals.	229
9.60 Journals cited most frequently by German journals.	231
9.61 Major sources of references to German journals.	232