Essays of an Information Scientist, Vol:2, p.160-167, 1974-76 Current Contents, #42, p.5-12, October 16, 1974

"Current Comments"

Journal Citation Studies. XV. Cancer Journals and Articles

October 16, 1974 Number 42

Research administrators and science policy makers have often asked for data to support the contention that basic research is necessary if we are to make advances in the 'war on cancer.' In this essay I believe we have provided such data.

Briefly here is the story. Articles on cancer research cite basic-research and other non-cancer journals more frequently than they cite cancer journals. In other words, cancer-oriented research today seems to be learning much from basic research, and is heavily dependent on non-cancer research. That will certainly not surprise most scientists. But such objective evidence might be profitably used to show legislators or impatient administrators that such claims are not mere fantasies or self-serving assertions.

In this study, sixteen journals formed the starting nucleus. They were suggested to us by the National Cancer Institute. We first determined what journals the collective group cited most frequently. Then we determined what journals cited them. We already knew the individual patterns from our *Journal Citation Reports*.[1,2] The sixteen journals were:

Bulletin du Cancer
British Journal of Cancer
British Journal of Experimental Pathology
Cancer Chemotherapy Reports
Cancer
Cancer Research
European Journal of Cancer
Gann
International Journal of Cancer
Journal of the National Cancer Institute
National Cancer Institute Monograph
Neoplasma
Proceedings of the American Association for Cancer Research
Progress in Experimental Tumor Research
Tumori
Zeitschrift für Krebsforschung

The results of our study are shown in Figures 1 and 2. These Figures show that three journals dominate the cancer literature: *Cancer, Cancer Research*, and *Journal of the National Cancer Institute*.

Figure 1 shows the top fifty journals most cited by our core group of 16 cancer journals. Figure 2 shows the top fifty that cited the core group most frequently. In Figure 2, the list of journals that cite cancer journals, most of the journals of the core are bunched near the top of the list. In

Figure 1, however, the list of journals most cited by cancer journals, the situation is quite different. Most of the cancer journals drop down into the general mass of the scientific literature. The field of cancer, thus, illustrates once again the law ofconcentration,[3] which applies to most specialities. The totals of the citation counts in the two figures tell the same story. Considering the top 50 journals in each figure, we have the following. The cancer journals cited other journals 24,476 times. Fifty-eight percent of those citations were to non-cancer journals, 42% to cancer journals. The cancer journals were cited 19,292 times (79% of their citing rate). Of that number, cancer journals accounted for 56% of the total, and non-cancer journals for 44%.

For each journal, the lists provide the following: (1) total citations to or by all scientific journals; (2) total citations to or by cancer journals ('cancer citations'); (3) the percentage of cancer citations in terms of total citations; (4) the self-cited and self-citing rates in terms of cancer citations (5) impact in terms of all citations; (6) the *cancer* impact, that is the impact when only cancer journals are considered rather than all journals; and (7) a number expressing the ratio between overall impact and cancer impact.

The relationship between the two impact factors is extremely interesting. It is a measure of the similarities between cancer journals. The higher the value, the greater the similarity between the journal and our definition of cancer, in terms of journal selection for the core. For example, it is obvious that cancer journals have a higher percentage of citations to cancer journals than other journals in Figure 1, usually above 25%.

As we have indicated previously, larger prestigious journals have an undoubted edge in citation analysis if one considers only total citations received. It is considerably mitigated by relating citations to articles published. We call this the impact factor. The modified impact number may be useful for comparing journals in a given specialty. For example, *Neoplasma* is cited only 192 times. It was cited by cancer journals 124 times. Its overall impact factor is 0.638, based on the number of its 1967 and 1968 articles that were cited in 1969. However, its cancer impact was 0.555. Thus, the ratio of the two is 87.0. Similarly the *British Journal of Experimental Pathology* was cited overall 2,420 times, but only 184 times in cancer journals. While its general impact was 1.476, its cancer impact was relatively low (0.134), and its ratio only 9.1. As compared to other cancer journals in the study, one wonders why this pathology journal was singled out for inclusion! The *Journal of Invertebrate Pathology*, by comparison, has a ratio of 21.1

Following a pattern established in previous editorials of this type, as for example in our citation analysis of pediatric journals,[4] we have included in Figure 3 articles from our core cancer journals that were cited more than 100 times in the period 1961-1972. By coincidence there were exactly 100 of them. Only ten of the sixteen journals in the data base are represented. The first five journals account for 94%. *Cancer Research* published 41; *Journal of the National Cancer Institute*, 29; *British Journal of Experimental Pathology*, 12; *Cancer*, 8; *British Journal of Cancer*, 4; and *International Journal of Cancer*, 2. Only one article each turned up from *Cancer Chemotherapy Reports, Gann, Progress in Experimental Tumor Research*, and *Zeitschrift für Krebsforschung*. Fifty-nine of the articles appeared in the 60s, 35 in the 50s, and 6 in the 40s. Whether the list reflects accurately the main points of research concentration in cancer during the past decade, only expert readers can determine.

The top article in the list deserves special comment. In such lists, it is unusual that the first article should stand so far ahead of others. Nowell's paper on phytohemagglutinin was cited 774 times; the second item was cited only 427 times. Nowell attributes the article's citation record to its report of a "seminal technical advance rather than a conceptual advance."[5] Nevertheless, as I understand it, the article was the basic report that led to development of lymphocyte cultures and greatly facilitated research on human chromosomes in cancer, leukemia and other disorders. It became also a model system for immunological studies, which in turn and time, as we know, have had enormous impact on cancer research.

It should be noted that perhaps some extremely significant articles in cancer research are not on this list. They may have appeared in *Nature* or *Science* or whatever--those non-cancer journals heavily cited by cancer research workers. If most of these articles in such journals turn out to be obviously cancer-oriented, then one may conclude that there is a need for a few more journals in this field.

A final note--since our journal data is five years old, certain journals will not show up as well as would be expected. By early 1975 we expect to reexamine this list of journals and to report any significant changes.

1. Garfield, E. ISI®'s *Journal Citation Index* data base, a multi-media tool. *Current Contents* (CC®) No. 16, 19 April 1972, p. 5-8.

2. --------------. The new ISI *Journal Citation Reports*® should significantly affect the future course of scientific publication. *CC* No. 33, 15 August 1973, p. 5-6.

3. --------------. The mystery of the transposed journal lists; wherein Bradford's law of scattering is generalized according to Garfield's law of concentration. *CC* No. 31, 4 August 1971, p. 5-6.

4. --------------. Journal citation studies. IX. Highly cited pediatric journals and articles. *CC* No. 29, 17 July 1974, p. 5-9.

5. Nowell, P.C. Personal communication, 3 October 1974.

6. Garfield, E. Citation analysis as a tool in journal evaluation. *Science* 178:471-79, 1972. Reprinted in *Current Contents* No. 6, 7 February 1973, p. 5-24.

Figure 1. Journals Cited by Cancer Journals

	Journal	Total Citations (A)	Cancer Citations (B)	(B/A)	Overall Impact (C)	Cancer Impact (D)	Impact Ratio (D/C)x 100
*1.	*Cancer Res.*	9772	3372	34.5	3.084	1.105	35.9
*2.	*J. Nat. Cancer Inst.*	6604	2752	41.7	4.400	2.105	47.8
*3.	*Cancer*	5656	1488	26.3	2.162	0.594	27.4
*4.	Nature	61240	1388	2.3	2.244	0.050	2.2
*5.	P. Soc. Exp. Biol. Med.	20044	868	4.3	1.964	0.118	6.1
*6.	Science	38956	836	2.2	2.894	0.048	1.7
*7.	*Brit. J. Cancer*	1860	804	43.2	1.670	0.722	43.2
*8.	J. Biol. Chem.	68012	796	1.2	6.371	0.054	0.8
*9.	Ann. New York Acad. Sci.	15024	620	4.1	1.815	0.003	0.2
*10.	Lancet	30448	600	2.0	1.509	0.001	0.1
*11.	J. Amer. Med. Assoc.	17952	584	3.3	1.027	0.041	4.0
12.	J. Exp. Med.	15432	528	3.4	9.030	0.227	2.5
13.	P. Nat. Acad. Sci. USA	32824	516	1.6	1.308	0.095	7.2
14.	J. Cell Biol.	19076	480	2.5	3.484	0.076	2.2
*15.	New Engl. J. Med.	18096	456	2.5	2.453	0.069	2.8
*16.	Amer. J. Pathol.	5740	432	7.5	1.916	0.152	7.9
*17.	*Internat. J. Cancer*	1088	428	39.3	2.533	1.062	41.9
18.	Virology	9492	388	4.1	4.720	0.195	4.1
*19.	Surg. Gyn. Obst.	5468	376	6.9	1.578	0.087	5.5
20.	J. Med. Microbiol.	3952	372	9.4	20.000	1.600	8.0
*21.	*Nat. Cancer Inst. Mon.*	576	372	64.6	0.738	1.235	169.2
*22.	Biochim. Biophys. Acta	38000	368	1.0	3.287	0.029	0.9
*23.	Fed. Proc.	13364	364	2.7	0.568	0.135	2.4
*24.	Exp. Cell. Res.	7528	348	4.6	2.273	0.081	3.6
25.	Biochem. J.	30500	292	1.0	3.193	0.030	0.9
*26.	*Gann*	620	292	47.1	0.874	0.318	36.4
27.	Blood	6444	288	4.5	2.867	0.138	4.8
28.	*P. Amer. Assoc. Cancer Res.*	864	288	33.3	0.421	0.174	41.3
29.	Brit. Med. J.	17156	284	1.7	0.778	0.006	0.7
30.	Lab. Invest.	3668	272	7.4	2.008	0.130	6.5
31.	Ann. Surg.	6504	264	4.1	1.665	0.077	4.6
*32.	*Zschr. Krebsforschung*	664	256	38.6	1.212	0.394	32.5
*33.	Arch. Pathol.	4496	248	5.5	1.509	0.055	3.7
34.	Amer. J. Med.	8752	216	2.5	4.694	0.158	3.4
35.	Comptes Rendus.	21888	196	0.9	0.780	0.007	1.0
*36.	*Brit. J. Exp. Pathol.*	2420	184	7.6	1.476	0.134	9.1
*37.	J. Immunology	10492	180	1.7	4.305	0.109	2.5
38.	Amer. J. Roentgenol.	4976	160	3.2	1.257	0.024	1.9
39.	J. Amer. Vet. Med. Ass.	1924	156	8.1	0.488	0.038	8.5
*40.	*Eur. J. Cancer*	420	148	75.7	2.027	1.609	79.4
*41.	Transplantation	2036	144	7.1	3.164	0.228	7.2
*42.	*Cancer Chemother. Rep.*	796	140	17.6	1.206	0.229	19.0
*43.	Radiology	4700	140	3.0	1.533	0.035	2.3
*44.	Brit. J. Surg.	2356	136	5.8	0.506	0.005	0.9
45.	J. Histochem. Cytochem.	4892	136	2.8	2.442	0.012	0.3
46.	Ann. Internal Med.	7728	132	1.7	1.640	0.021	1.4
47.	Anat. Rec.	5416	124	2.3	0.423	0.002	0.1
*48.	J. Clin. Invest.	19116	124	0.6	3.461	0.004	0.1
49.	J. Invert. Pathol.	924	124	13.4	1.194	0.252	21.1
*50.	*Neoplasma*	192	124	64.5	0.638	0.555	87.0
*86.	*Prog. Exp. Tumor Res.*	192	88	45.8	2.400	1.067	44.4
*87.	*B. Cancer*	228	88	38.5	0.413	0.310	75.1
*113.	*Tumori*	124	44	35.5	0.238	0.119	50.2

Figure 1. Journals cited most frequently by 16 cancer journals. Numbers are based on an annual extrapolation from a quarterly sample (see reference 6). The title abbreviations of journals among the 16 used as the data base for this study are italicized. An asterisk indicates that the particular journal is common to the lists in Figures 1 and 2.

Figure 2. Journals that Most Often Cited Cancer Journals

	Journal	Total Citations (A)	Cancer Citations (B)	(B/A)	Impact Factor	Self-Citing Rate	Self-Cited Rate
*1.	*J. Nat. Cancer Inst.*	7004	[illegible]	28.8	4.400	37.9	51.8
*2.	*Cancer Res.*	7056	[illegible]	26.7	3.084	33.5	55.9
*3.	*Nat. Cancer Inst. Mon.*	10208	[illegible]	16.0	2.673	48.6	17.1
*4.	*Cancer*	7484	[illegible]	29.8	2.162	57.3	57.6
*5.	*Eur. J. Cancer*	2804	[illegible]	26.8	2.027	75.7	14.9
6.	Sem. Hematol.	1472	[illegible]	49.7	3.916		
*7.	*Progr. Exp. Tumor Res.*	2708	[illegible]	26.7	2.400	45.8	2.8
*8.	Proc. Soc. Exp. Biol. Med.	19604	[illegible]	3.3	1.964		
*9.	Ann. New York Acad. Sci.	41844	[illegible]	10.3	1.815		
*10.	*Brit. J. Cancer*	1820	[illegible]	28.6	1.670	21.4	41.3
*11.	*Internat. J. Cancer*	1204	[illegible]	34.5	2.533	29.0	29.8
*12.	Fed. Proc.	6712	[illegible]	6.1	0.568		
*13.	*Neoplasma*	2248	[illegible]	18.0	0.638	100.0	30.7
*14.	*Gann*	1420	[illegible]	27.6	0.874	41.1	30.6
*15.	Exp. Cell Res.	7756	[illegible]	4.7	2.273		
16.	Acta Path. Scand.	6940	[illegible]	4.6	1.009		
*17.	Lancet	17636	[illegible]	1.7	1.509		
18.	Amer. J. Surg.	7496	[illegible]	4.1	0.992		
19.	Acta Cytol.	2292	[illegible]	12.0	1.046		
20.	Arch. Geschw.	1296	[illegible]	21.3	0.500		
21.	Molec. Pharmacol.	2656	[illegible]	9.9	4.028		
*22.	J. Immunol.	12084	[illegible]	2.1	4.305		
*23.	*Zschr. Krebsforschung*	1256	[illegible]	19.7	1.212	34.3	35.5
*24.	Transplantation	5068	[illegible]	4.7	3.164		
*25.	Biochim. Biophys. Acta	41076	[illegible]	0.6	3.287		
*26.	*Brit. J. Exp. Pathol.*	2168	[illegible]	10.1	1.476	93.5	78.2
*27.	Nature	27108	[illegible]	0.8	2.244		
*28.	New Engl. J. Med.	14064	[illegible]	1.5	2.453		
*29.	Science	22796	[illegible]	3.5	2.894		
*30.	Arch. Pathol.	3576	[illegible]	5.0	1.509		
*31.	*Cancer Chemother. Rep.*	380	[illegible]	46.3	1.206	74.3	59.1
*32.	J. Biol. Chem.	34636	[illegible]	0.5	6.371		
33.	Path. Biol.	4308	[illegible]	3.7	0.722		
34.	Virch. Arch. B.	2628	[illegible]	5.9	1.066		
*35.	Brit. J. Surg.	2692	[illegible]	5.6	0.506		
36.	Rev. Fr. Clin.	2132	[illegible]	7.1			
37.	J. Pathology	4404	[illegible]	3.6	0.037		
38.	Exp. Mol. Path.	2204	[illegible]	6.4	1.948		
39.	Acta Med. Oka.	2580	[illegible]	5.0	1.400		
40.	J. Neurosurg.	4576	[illegible]	2.8	1.320		
41.	Klin. Wschr.	9844	[illegible]	1.3	0.723		
*42.	Radiology	8444	[illegible]	1.4	1.533		
*43.	J. Amer. Med. Assoc.	8266	[illegible]	1.4	1.027		
*44.	Amer. J. Pathol.	3716	[illegible]	3.0	1.916		
*45.	Surg. Gyn. Obst.	3680	[illegible]	2.8	1.578		
46.	Amer. J. Clin. Path.	3384	[illegible]	3.0	0.623		
47.	Deut. Med. Wschr.	16052	[illegible]	0.6	0.675		
*48.	J. Clin. Invest.	9160	[illegible]	1.1	3.461		
49.	Amer. J. Obst. Gyn.	10948	[illegible]	0.9	1.269		
50.	Med. J. Australia	6396	[illegible]	1.5	0.501		
*101.	*B. Cancer*	936	[illegible]	8.1	0.413	38.5	
*123.	*Tumori*	284	[illegible]	11.3	0.238	35.5	37.5

Figure 2. Journals that cited 16 cancer journals most frequently. Numbers are based on an annual extrapolation from a quarterly sample (see reference 6). The title abbreviations of journals among the 16 used as the data base for this study are italicized. An asterisk indicates that the particular journal is common to the lists in Figures 1 and 2. Self-citing rate is the percentage of a journal's citation of itself in terms of total citations it makes. Self-cited rate is the percentage of a journal's citation of itself in terms of total citations it receives.

Figure 3. Highly Cited Articles from Ten Highly Cited Cancer Journals.

	Times Cited 1961-1972	Bibliographical Data
1.	774	**Nowell P C.** Phytohemagglutinin; an initiator of mitosis in cultures of normal leukocytes. *Cancer Research* 20:462-6, 1960.
2.	427	**Earle W R, Schilling E L, Stark T H, Straus N P, Brown M F & Shelton E.** Production of malignancy in vitro, IV, The mouse fibroblast cultures and changes seen in the living cells. *J. Nat. Cancer Inst.* 4:165-212, 1943.
3.	359	**Biozzi G, Benacerraf B & Halpern B N.** Quantitative study of the granulopectic activity of the reticuloendothelial system. II. A study of the kinetics of the granulopectic activity of the RES in relation to the dose of carbon injected; relationship between the weight of the organs and their activity. *Brit. J. Exp. Pathol.* 34:441-57, 1953.
4.	325	**Goldburg J A & Rutenberg A M.** The colorimetric determination of leucine aminopeptidase in urine and serum of normal subjects and patients with cancer and other diseases. *Cancer* 11:283-91, 1958.
5.	323	**Prehn R T & Main J M.** Immunity to methylcholanthrene-induced sarcomas. *J. Nat. Cancer Inst.* 18:769-78, 1957.
6.	303	**Rosenau W & Moon H D.** Lysis of homologous cells by sensitized lymphocytes in tissue culture. *J. Nat. Cancer Inst.* 27:471-83, 1961.
7.	302	**Klein G, Sjogren H O, Klein E & Hellstrom K E.** Demonstration of resistance against methylcholanthrene-induced sarcomas in the primary autochthonous host. *Cancer Research* 20:1561-72, 1960.
8.	301	**Rueckert R R & Mueller G C.** Studies on unbalanced growth in tissue culture. I. Induction and consequences of thymidine deficiency. *Cancer Research* 20:1584-91, 1960.
9.	300	**Abercrombie M & Ambrose E J.** The surface properties of cancer cells; a review. *Cancer Research* 22:525-48, 1962.
10.	296	**Dunn T B.** Normal and pathologic anatomy of the reticular tissue in laboratory mice, with a classification and discussion of neoplasms. *J. Nat. Cancer Inst.* 14:1281-1434, 1954.
11.	291	**Porter K R & Bruni C.** An electron microscope study of the early effects of 3'-Me-DAB on rat liver cells. *Cancer Research* 19:997-1009, 1959.
12.	278	**Druckrey H, Preussmann R, Ivankovic S, Schmahl D, Afkham J, Blum G, Mennel H D, Muller M, Petropoulos P, & Schneider H.** Organotrope carcinogene Wirkungen bei 65 verschiedenen N-Nitrosoverbindungen an BD-Ratten. [Organotropic carcinogenic effects of 65 different N-nitroso-compounds in BD rats]. *Zschr. Krebsforschung* 69:103-201, 1967.
13.	268	**Gey G O, Coffman W D & Kubicek M T.** Tissue culture studies of the proliferative capacity of cervical carcinoma and normal epithelium. *Cancer Research* 12:264-65, 1952.
14.	262	**Chalkley H W.** Method for the quantitative morphologic analysis of tissues. *J. Nat. Cancer Inst.* 4:47-53, 1943.
15.	248	**Kaliss N.** Immunological enhancement of tumor homografts in mice; a review. *Cancer Research* 18:992-1003, 1958.
16.	248	**Rauscher F J.** A virus-induced disease of mice characterized by erythrocytopoiesis and lymphoid leukemia. *J. Nat. Cancer Inst.* 29:515-43, 1962.
17.	245	**Fawcett D W.** Observations on the cytology and electron microscopy of hepatic cells. *J. Nat. Cancer Inst.* 15:1475-1504, 1955.
18.	239	**Moloney J B.** Biological studies on a lymphoid-leukemia virus extracted from sarcoma 37. I. Origin and introductory investigations. *J. Nat. Cancer Inst.* 24:933-51, 1960.
19.	237	**Foley E J.** Antigenic properties of methylcholanthrene-induced tumors in mice of the strain of origin. *Cancer Research* 13:835-37, 1953.
20.	233	**Bernhard W.** The detection and study of tumor viruses with the electron microscope. *Cancer Research* 20:712-27, 1960.
21.	231	**Hughes D E.** A press for disrupting bacteria and other microorganisms. *Brit. J. Exp. Pathol.* 32:97-109, 1951.
22.	225	**Bollum F J & Potter V R.** Nucleic acid metabolism in regenerating rat liver. VI. Soluble enzymes which convert thymidine phosphates and DNA. *Cancer Research* 19:561-65, 1959.
23.	217	**Conney A H, Miller E C & Miller J A.** The metabolism of methylated aminoazo dyes. V. Evidence for induction of enzyme synthesis in the rat by 3-methylcholanthrene. *Cancer Research* 16:450-59, 1956.
24.	217	**Gorer P A & Mikulska Z B.** The antibody response to tumor inoculations; improved methods of antibody detection. *Cancer Research* 14:651-55, 1954.
25.	216	**Bernhard W.** Electron microscopy of tumor cells and tumor viruses; a review. *Cancer Research* 18:491-509, 1958.
26.	206	**Burstone M S.** Histochemical comparison of naphthol AS-phosphates for the demonstration of phosphates. *J. Nat. Cancer Inst.* 20:601-16, 1958.
27.	202	**Klein E & Klein G.** Antigenic properties of lymphomas induced by the Moloney agent. *J. Nat. Cancer Inst.* 32:547-68, 1964.
28.	198	**Nowell P C & Hungerford D A.** Chromosome studies on normal and leukemic human leukocytes. *J. Nat. Cancer Inst.* 25:85-109, 1960.
29.	198	**Sanford K K, Earle W R & Likely G D.** The growth in vitro of single isolated tissue cells. *J. Nat. Cancer Inst.* 9:229-46, 1948.
30.	194	**Sjogren H O, Hellstrom I & Klein G.** Transplantation of polyoma virus-induced tumors in mice. *Cancer Research* 21:329-37, 1961.
31.	185	**Knox W E.** Two mechanisms which increase in vivo the liver tryptophan peroxidase activity; specific enzyme adaptation and stimulation of the pituitary-adrenal system. *Brit. J. Exp. Pathol.* 32:462-69, 1951.

32. 185 **Magee P N & Barnes J M.** The production of malignant primary hepatic tumours in the rat by feeding dimethylnitrosamine. *Brit. J. Cancer* 10:114-22, 1956.
33. 182 **Burstone M S.** Histochemical demonstration of acid phosphates with naphthol AS-phosphates. *J. Nat. Cancer Inst.* 21:523-40, 1958.
34. 180 **Volkman A & Gowans J L.** Origin of macrophages from bone marrow in the rat. *Brit. J. Exp. Pathol.* 46:62-70, 1965.
35. 179 **Miller E C, Miller J A & Hartmann H A.** N-Hydroxy 2-acetylaminofluorene; a metabolite of 2-acetylaminofluorene with increased carcinogenic activity in the rat. *Cancer Research* 21:815-24, 1961.
36. 178 **Baserga R.** Relationship of cell cycle to tumor growth and control of cell division; a review. *Cancer Research* 25:581-95, 1965.
37. 173 **Harnden D G.** A human skin culture technique used for cytological examinations. *Brit. J. Exp. Pathol.* 41:31-7, 1960.
38. 172 **Revesz L.** Detection of antigenic differences in isologous host-tumor systems by pretreatment with heavily irradiated tumor cells. *Cancer Research* 20:443-51, 1960.
39. 171 **Bruce W R, Meeker B E & Valeriot F A.** Comparison of sensitivity of normal hematopoietic and transplanted lymphoma colony-forming cells to chemotherapeutic agents administered in vivo. *J. Nat. Cancer Inst.* 37:233-45, 1966.
40. 171 **Wheeler G P.** Studies related to the mechanisms of action of cytotoxic alkylating agents; a review. *Cancer Research* 22:651-88, 1962.
41. 169 **Old L J, Benacerraf B, Clarke D A, Carswell, E A & Stockert E.** Role of the reticuloendothelial system in host reaction to neoplasia. *Cancer Research* 21:1281-1300, 1961.
42. 168 **Levey R H, Trainin N & Law L W.** Evidence for function of thymic tissue in diffusion chambers implanted in neonatally thymectomized mice; preliminary report. *J. Nat. Cancer Inst.* 31:199-217, 1963.
43. 166 **Mantel R & Haenszel W.** Statistical aspects of the analysis of data from retrospective studies of disease. *J. Nat. Cancer Inst.* 22:719-48, 1959.
44. 158 **Sullivan R D, Miller E & Sikes M P.** Antimetabolite-metobolite combination cancer chemotherapy; effects of intra-arterial methotrexate and intramuscular citrovorum factor therapy in human cancer. *Cancer* 12:1248-62, 1959.
45. 156 **Bullough W S.** Mitotic and functional homeostasis; a speculative review. *Cancer Research* 25:1683-1727, 1965.
46. 155 **Dalton A J, Law L W, Moloney J B & Manaker R A.** An electron microscopic study of a series of murine lymphoid neoplasms. *J. Nat. Cancer Inst.* 27:747-91, 1961.
47. 151 **Rosenberg S A.** Report of a committee on stagings of Hodgkin's disease. *Cancer Research* 26:1310, 1966.
48. 150 **Bosch L, Harbers E & Heidelberger C.** Studies on fluorinated pyrimidines. V. Effects on nucleic acid metabolism in vitro. *Cancer Research* 18:335-43, 1958.
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