Current Comments

The 1,000 Contemporary Scientists Most-Cited 1965-1978. Part I. The Basic List and Introduction

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At ISI® we've conducted hundreds of citation studies over the years. But none of them involved as massive an undertaking as that which preceded the compilation of the following list. (See Table 1.) As the title indicates, the list consists of the names of the 1,000 scientist-authors most-cited for work published from 1965-1978. This study took over two years to prepare, required approximately a month of large-scale computer time (over 750 hours), and drew upon the resources of many ISI staff members, especially Linda Cooper, manager of bibliographic research, editorial features. Others are acknowledged below.

We used "all-author" data derived from the *Science Citation Index®* (*SCI®*) data base, 1965-1978. Therefore, the list excludes social scientists. When we first began publishing lists of most-cited authors, we used first-author data only.[1] This was due to a continuing convention in the *Citation Index* section of *SCI*, in which cited and citing articles are listed under the name of only the first author listed on the paper. In the early days, these first-author lists were adequate for many purposes. But increasingly we felt the need to treat all authors in every article as though they were listed first. It is not just that science has become increasingly collaborative. Experienced scientists, already well known to their peers, were often and increasingly listed as secondary or coauthors. So we developed a system to let us do so.

In 1978 we used all-author data to publish a list of the 300 most-cited authors, 1961-1976.[2] The list which follows provides a new chronological perspective, although it is limited to the 14-year period, 1965-1978. This is an important four-year shift to even more contemporary science.

The list has also been expanded to consist of 1,000 scientists. Contrary to what I had expected, this step does not overcome a serious bias in this study and earlier ones. For a variety of reasons, the life sciences continue to be "overrepresented." Since citation practices vary so drastically among fields, caution must be used in the comparison of raw citation counts.[3] We have made no effort in this study to solve this problem by segmenting our files. This in fact will be done in follow-up studies to cover mathematics, earth sciences, physics, chemistry, and other fields outside the life sciences. It will become practical to do so as we implement new discipline-oriented data bases.

Developing all-author lists is considerably more complex than conducting first-author studies. To create this list, more than 67 million references in the *Citation Index* were compared with the entries in the *Source Index* of *SCI* for the period 1965-1978—more than five million published papers. It is not fully realized by most readers that the *Source Index* does in fact include every author of every article indexed—so we can treat each author as though he or she were the first author.

Table 1: The 1,000 most-cited authors for work published from 1965-1978, presented with their first and last names; field or discipline; birth and (where applicable) death dates; and number of citations received. An asterisk next to a name indicates possible incomplete information. A check mark indicates authors new to the top 300. Since citation practices vary among fields, caution should be used in comparing raw data.

AARONSON, STUART A	ONCOLOGY	1942	6072
* ABRAMS, GERALD STANLEY	PHYSICS	1941	3249
ADLER, STEPHEN L	PHYSICS	1939	3243
✓ AGHAJANIAN, GEORGE KEVORK	NEUROPHARMACOL	1932	4344
AKASOFU, SYUN ICHI	AERONOMY	1930	2536
✓ ALEXANDER, PETER	CELL BIOL	1922	4829
ALLEN, LELAND CULLEN	INORGANIC CHEM	1926	2821
ALLERHAND, ADAM	BIOPHYSICS	1937	2608
* *ALLFREY, VINCENT GEORGE*	*BIOCHEMISTRY*	1921	4196
* ALLINGER, NORMAN LOUIS	ORGANIC CHEM	1928	3023
ALLISON, ANTHONY CLIFFORD	IMMUNOLOGY	1925	5846
* ALPER, CHESTER A	IMMUNOLOGY	1931	2918
* ALTMAN, JOSEPH	NEUROLOGY	1925	2592
AMES, BRUCE NATHAN	ONCOLOGY	1928	4937
AMOS, DENNIS BERNARD	IMMUNOLOGY	1923	2958
ANDEN, NILS-ERIK BIRGER	PHARMACOLOGY	1937	5929
ANDERSON, PHILIP WARREN	PHYSICS	1923	2795
ANDREWS, PATRICK	BIOCHEMISTRY	1928	2515
ANFINSEN, CHRISTIAN BOEHMER	BIOCHEMISTRY	1916	4343
ANTONINI, ERALDO	BIOCHEMISTRY	1931	3127
AOKI, TADAO	IMMUNOLOGY	1930	2854
ARIAS, IRWIN MONROE	GASTROENTEROL	1926	3175
ARIMURA, AKIRA	ENDOCRINOLOGY	1923	5559
ARNAUD, CLAUDE DONALD	ENDOCRINOLOGY	1929	2554
* ASKONAS, BRIGITTE ALICE	IMMUNOLOGY	1923	2542
ASOFSKY, RICHARD MARCY	IMMUNOLOGY	1933	2598
ATKINSON, DANIEL EDWARD	BIOCHEMISTRY	1921	3301
ATTARDI, GIUSEPPE	MOLEC BIOL	1926	3294
AURBACH, GERALD DONALD	ENDOCRINOLOGY	1927	5245
AUSTEN, KARL FRANK	IMMUNOLOGY	1928	8538
AUSTEN, WILLIAM GERALD	PHYSIOLOGY	1930	3792
AVIOLI, LOUIS V	ENDOCRINOLOGY	1931	2454
✓ AVRAMEAS, STRATIS	IMMUNOLOGY	1930	4717
AXELROD, JULIUS	PHARMACOLOGY	1912	12425
* AXEN, ROLF	BIOCHEMISTRY	1930	2573
✓ BACH, FRITZ H	IMMUNOLOGY	1934	4975
* BACH, JEAN FRANCOIS	IMMUNOLOGY	1940	2806
BAEHNER, ROBERT L	HEMATOLOGY	1934	2645
BAGLIONI, CORRADO	CELL BIOL	1933	2735
BAHCALL, JOHN NORRIS	ASTROPHYSICS	1934	2569
* BAKER, BERNARD RANDALL	ORGANIC CHEM	1915-76	2857
BALDWIN, ROBERT WILLIAM	ONCOLOGY	1927	2695
BALTIMORE, DAVID	VIROLOGY	1938	6773
BAME, SAMUEL JARVIS	ASTROPHYSICS	1924	3022
BARGER, VERNON DUANE	*PHYSICS*	1938	2813
* BARRELL, BARCLAY GEORGE	MOLEC BIOL	1944	2936
BARTON, DEREK HAROLD RICHARD	ORGANIC CHEM	1918	3177
* BARTTER, FREDERIC CROSBY	ENDOCRINOLOGY	1914	2816
BASERGA, RENATO	CELL BIOL	1925	3046
BASTEN, A	IMMUNOLOGY	1939	2790
* BATTERSBY, ALAN RUSHTON	ORGANIC CHEM	1925	2564
BAULIEU, ETIENNE EMILE	ENDOCRINOLOGY	1926	3573
* BECKETT, ARNOLD HEYWORTH	PHARMACOLOGY	1920	2741
BENACERRAF, BARUJ	IMMUNOLOGY	1920	8694
* BENDER, MYRON LEE	ORGANIC CHEM	1924	3118
BENESCH, REINHOLD	BIOCHEMISTRY	1919	2870
BENESCH, RUTH ERICA	*BIOCHEMISTRY*	1926	2742
BENSCH, KLAUS GEORGE	PATHOLOGY	1928	2507
BENSON, SIDNEY WILLIAM	PHYSICAL CHEM	1918	3334
BERG, PAUL	MOLEC BIOL	1926	3411
BERNARD, JEAN ALFRED	HEMATOLOGY	1907	2558
BERNARDI, GIORGIO	MOLEC BIOL	1929	2438
* BERNHARD, WILHELM	BIOPHYSICS	1920-78	2881
* BERNSTEIN, RICHARD BARRY	PHYSICAL CHEM	1923	3030
BEROZA, MORTON	ORGANIC CHEM	1917	2474
BERSON, SOLOMON A	ENDOCRINOLOGY	1918-72	3946
BESSER, GORDON MICHAEL	ENDOCRINOLOGY	1936	3567
BEUTLER, ERNEST	HEMATOLOGY	1928	4483
BIANCO, CELSO	IMMUNOLOGY	1941	2644
BIERMAN, EDWIN LAWRENCE	ENDOCRINOLOGY	1930	2606
* BIRNBAUMER, LUTZ	ENDOCRINOLOGY	1939	3198
BISHOP, JOHN MICHAEL	VIROLOGY	1936	3545
* BJORKEN, JAMES D	PHYSICS	1934	3199
BJORKLUND, ANDERS	CELL BIOL	1945	3549
* BLACK, PAUL H	VIROLOGY	1930	2690
BLANDEN, ROBERT VINCENT	*IMMUNOLOGY*	1938	2463
✓ BLOBEL, GUNTHER K J	CELL BIOL	1936	4050
BLOCH, KURT JULIUS	IMMUNOLOGY	1929	2931
BLOEMBERGEN, NICOLAAS	PHYSICS	1920	2438
✓ BLOOM, FLOYD ELLIOTT	NEUROPHARMACOL	1936	4938
* BLOOM, STEPHEN ROBERT	GASTROENTEROL	1942	3725
BLOW, DAVID MERVYN	BIOPHYSICS	1931	2465
BLUMBERG, BARUCH SAMUEL	ONCOLOGY	1925	5840
✓ BODEY, GERALD PAUL	ONCOLOGY	1934	4580
BOHLMANN, FERDINAND	ORGANIC CHEM	1921	2640
BONNER, JAMES FREDERICK	GENETICS	1910	7049
* BORISY, GARY GUY	MOLEC BIOL	1942	3110
BORNSTEIN, PAUL	CELL BIOL	1934	3071
BORSOS, TIBOR	IMMUNOLOGY	1927	3464
BORST, PIET	MOLEC BIOL	1934	2661
BOSMANN, HAROLD BRUCE	PHARMACOLOGY	1942	3196
BOWERS, CYRIL YARLING	ENDOCRINOLOGY	1924	3681
BOWIE, JOHN HAMILTON	ORGANIC CHEM	1938	2627
BOYARSKI, ADAM M	PHYSICS	1935	3359
BOYSE, EDWARD A	IMMUNOLOGY	1923	10159
BRADBURY, EDWIN MORTON	CELL BIOL	1933	2448
BRADY, ROSCOE OWEN	NEUROLOGY	1923	5086
* BRANTON, DANIEL	CELL BIOL	1932	3408
BRAUNWALD, EUGENE	CARDIOLOGY	1929	13483
BRAWERMAN, GEORGE	MOLEC BIOL	1927	2623
BREESE, GEORGE RICHARD	PHARMACOLOGY	1936	2973
BREIDENBACH, MARTIN	PHYSICS	1943	3789
BRENNER, SYDNEY	*MOLEC BIOL*	1927	2611
✓ BRITTEN, ROY J	MOLEC BIOL	1919	4360
BRODIE, BERNARD BERYL	PHARMACOLOGY	1909	5566
BROWN, DONALD D	MOLEC BIOL	1931	3218
BROWN, GERALD E	PHYSICS	1926	2957
BROWN, HERBERT C	ORGANIC CHEM	1912	8756
BROWN, JEHOIADA J	PHYSIOLOGY	1927	3368
* BROWN, MICHAEL S	BIOCHEMISTRY	1941	3188
BROWNLEE, G G	*MOLEC BIOL*	1942	2882
BRUICE, THOMAS CHARLES	ORGANIC CHEM	1925	2876
BRUNNER, HANS RUDOLF	CARDIOLOGY	1937	2832
BRUNNER, K T	IMMUNOLOGY	1918	2917
* BULOS, FAGIN	PHYSICS	1925	3008
BUNNEY, WILLIAM EDWARD	PSYCHIATRY	1930	2743
* BURCH, GEORGE E	CARDIOLOGY	1910	2765
✓ BURGER, MAX MARCEL	CELL BIOL	1933	4443
BURGUS, ROGER CECIL	ENDOCRINOLOGY	1934	2962
BURNSTOCK, GEOFFREY	PHARMACOLOGY	1929	3089
BUSCH, HARRIS	PHARMACOLOGY	1923	4921
* BUTCHER, REGINALD WILLIAM	PHYSIOLOGY	1930	6511
BUTLER, WARREN LEE	*BIOPHYSICS*	1925	2454
CAHILL, GEORGE FRANCIS	PHYSIOLOGY	1927	3783
CAMERON, ALASTAIR GRAHAM W	ASTROPHYSICS	1925	2928
* CANELLOS, GEORGE P	ONCOLOGY	1934	2453
CANTOR, CHARLES ROBERT	BIOCHEMISTRY	1942	2616
CANTOR, HARVEY	IMMUNOLOGY	1942	2506
CARBONE, PAUL P	ONCOLOGY	1931	4962
CARDONA, MANUEL	PHYSICS	1936	3190
CARLSON, LARS A	PHYSIOLOGY	1928	3374
CARLSSON, ARVID	NEUROPHARMACOL	1923	4118
CASIDA, JOHN EDWARD	BIOCHEMISTRY	1929	2445
CASPERSSON, TORBJORN O	CELL BIOL	1910	2599
CATT, KEVIN JOHN	ENDOCRINOLOGY	1932	3782
CEROTTINI, JEAN-CHARLES	IMMUNOLOGY	1938	3103
CHALKLEY, ROGER	MOLEC BIOL	1939	3742
CHAMBON, PIERRE H	MOLEC BIOL	1931	3397
* CHANCE, BRITTON	BIOCHEMISTRY	1913	7131
CHANGEUX, JEAN-PIERRE	NEUROLOGY	1936	6701
* CHANOCK, ROBERT MERRITT	VIROLOGY	1924	6089
✓ CHAPMAN, DENNIS	BIOPHYSICS	1927	4404
CHATT, JOSEPH	INORGANIC CHEM	1914	2665
* CHINOWSKY, WILLIAM	PHYSICS	1929	2993
* CHOPPIN, PURNELL WHITTINGTON	VIROLOGY	1929	3008
* CHOPRA, INDER JIT	ENDOCRINOLOGY	1939	2532
CHRAMBACH, ANDREAS C	*BIOCHEMISTRY*	1927	2744
CHURCHILL, MELVYN ROWEN	INORGANIC CHEM	1940	3633
CLAMAN, HENRY NEUMANN	IMMUNOLOGY	1930	3076
* CLARK, ALVIN JOHN	MOLEC BIOL	1933	2853
CLARK, HOWARD CHARLES	ORGANOMET CHEM	1929	3026
CLARK, ROBIN JON HAWES	INORGANIC CHEM	1935	2505
CLEAVER, JAMES EDWARD	GENETICS	1938	3309
CLEGG, JOHN BRIAN	HEMATOLOGY	1938	2992
* CLEMENTI, ENRICO	THEORETICAL CHEM	1931	4001
* CLIFFORD, PETER	ONCOLOGY	1921	3444
CLINE, MARTIN J	HEMATOLOGY	1934	3005
COBURN, JACK WESLEY	PHYSIOLOGY	1932	2928
COCHRANE, CHARLES G	IMMUNOLOGY	1930	3848
COGGESHALL, RICHARD E	NEUROLOGY	1932	3766
COHEN, ALAN SEYMOUR	PATHOLOGY	1926	2749
✓ COHEN, MARVIN LOU	PHYSICS	1935	3882
COHEN, STANLEY N	MOLEC BIOL	1935	2884
* *COHN, MELVIN*	*IMMUNOLOGY*	1922	2749
✓ COHN, ZANVIL A	CELL BIOL	1926	4162
COLLMAN, JAMES PADDOCK	INORGANIC CHEM	1932	3198
COMINGS, DAVID EDWARD	CELL BIOL	1935	2662
CONN, JEROME W	ENDOCRINOLOGY	1907	2944
CONNEY, ALLAN HOWARD	PHARMACOLOGY	1930	7968
COOKS, ROBERT GRAHAM	ORGANIC CHEM	1941	2594
COOLEY, DENTON ARTHUR	CARDIOLOGY	1920	2959
COON, MINOR J	ENZYMOLOGY	1921	2947
COOPER, MAX DALE	IMMUNOLOGY	1933	5774
COREY, ELIAS JAMES	ORGANIC CHEM	1928	9152
CORRODI, HANS	PHARMACOLOGY	1929-74	5010
COSTA, ERMINIO	*PHARMACOLOGY*	1924	6430
COTTON, FRANK ALBERT	INORGANIC CHEM	1930	8365
✓ COVELL, JAMES WACHOB	PHYSIOLOGY	1936	4579
COWAN, WILLIAM MAXWELL	NEUROLOGY	1931	3100
COWLEY, ROGER ARTHUR	PHYSICS	1939	2382
COY, DAVID HOWARD	ENDOCRINOLOGY	1944	3565
CRAM, DONALD JAMES	ORGANIC CHEM	1919	2540
CROMER, DON T	PHYSICS	1923	6778
CUATRECASAS, PEDRO	BIOCHEMISTRY	1936	10543
* CURRAN, PETER FERGUSON	BIOPHYSICS	1931-74	2801
CURTIS, DAVID RODERICK	PHARMACOLOGY	1927	3819
* DAHL, LAWRENCE FREDERICK	PHYSICAL CHEM	1929	3440
DAHLSTROM, ANNICA B	HISTOLOGY	1941	2513
DALGARNO, ALEXANDER	ASTROPHYSICS	1928	4127
✓ DALY, JOHN W	PHARMACOLOGY	1933	6930
✓ DAMATO, ANTHONY NICHOLAS	CARDIOLOGY	1930	4551
DARNELL, JAMES EDWIN	CELL BIOL	1930	7904
* DATTA, NAOMI	MOLEC BIOL	1922	2796
DAUGHADAY, WILLIAM HAMILTON	ENDOCRINOLOGY	1918	3973
DAUSSET, JEAN	IMMUNOLOGY	1916	2861

✓	DAVID, JOHN R	IMMUNOLOGY	1930	4243	✓	GILMAN, ALFRED G	PHARMACOLOGY	1941	3987
	DAVIDSON, ERIC HARRIS	MOLEC BIOL	1937	3334	*	GLASHOW, SHELDON LEE	PHYSICS	1932	3539
	DAVIDSON, ERNEST ROY	PHYSICAL CHEM	1936	5123		GLOWINSKI, J	NEUROPHARMACOL	1938	5362
✓	DAVIDSON, NORMAN RALPH	MOLEC BIOL	1916	4702	✓	GOLD, PHIL	ONCOLOGY	1936	3958
	DAVIS, JAMES OTHELLO	PHYSIOLOGY	1916	2483		GOLDBERG, NELSON D	PHARMACOLOGY	1931	2461
	DAVIS, JOHN MARCELL	PSYCHIATRY	1933	3462	✓	GOLDHABER, GERSON	PHYSICS	1924	3955
	DAWSON, R M C	BIOCHEMISTRY	1924	2477		GOLDSTEIN, AVRAM	PHARMACOLOGY	1919	2524
	DE DUVE, CHRISTIAN RENE	CELL BIOL	1917	4663		GOLDSTEIN, IRWIN JOSEPH	BIOCHEMISTRY	1929	3201
	DE ROBERTIS, EDUARDO DIEGO P	CELL BIOL	1913	2639		GOLDSTEIN, JOSEPH LEONARD	GENETICS	1940	3960
✓	DE VITA, VINCENT T	ONCOLOGY	1935	5163		GOLDSTEIN, MENEK	NEUROLOGY	1924	2577
	DELUCA, HECTOR FLOYD	BIOCHEMISTRY	1930	12090		GOOD, ROBERT ALAN	IMMUNOLOGY	1922	17679
	DEWAR, MICHAEL JAMES STEUART	PHYSICAL CHEM	1918	8368		GOODMAN, HOWARD MICHAEL	MOLEC BIOL	1938	3629
*	DIAMOND, JARED MASON	PHYSIOLOGY	1937	2845		GOODWIN, FREDERICK KING	PSYCHIATRY	1936	2793
	DICZFALUSY, EGON	ENDOCRINOLOGY	1920	2758		GOODWIN, TREVOR WALWORTH	BIOCHEMISTRY	1916	2543
	DIETSCHY, JOHN MAURICE	GASTROENTEROL	1932	2504		GORBACH, SHERWOOD LESLIE	MICROBIOL	1934	3460
	DIXON, FRANK JAMES	IMMUNOLOGY	1920	7456		GORDEN, PHILLIP	ENDOCRINOLOGY	1934	2503
	DJERASSI, CARL	ORGANIC CHEM	1923	7704	*	GORDON, ROY GERALD	PHYSICAL CHEM	1940	3087
*	DOLL, RICHARD	ONCOLOGY	1912	2939	*	GORLIN, RICHARD	CARDIOLOGY	1926	5894
*	DOLLERY, COLIN TERENCE	PHARMACOLOGY	1931	3016		GORSKI, JACK	ENDOCRINOLOGY	1931	3225
	DOTY, PAUL MEAD	MOLEC BIOL	1920	2762		GRAHAM, RICHARD CYRIL	IMMUNOLOGY	1934	3322
	DOUGLAS, STEVEN DANIEL	IMMUNOLOGY	1939	3098		GRANT, DAVID MORRIS	PHYSICAL CHEM	1931	4248
	DOWLING, JOHN ELLIOTT	PHYSIOLOGY	1935	2695		GRAY, HARRY B	INORGANIC CHEM	1935	4627
	DRAGO, RUSSELL STEPHEN	INORGANIC CHEM	1928	3402		GREAVES, MELVYN FRANCIS	IMMUNOLOGY	1941	3657
	DRAY, SHELDON	IMMUNOLOGY	1920	2764		GREEN, DAVID EZRA	BIOPHYSICS	1910	3507
	DRELL, SIDNEY DAVID	PHYSICS	1926	2748		GREEN, HOWARD	CELL BIOL	1925	4223
	DRUCKREY, HERMANN	ONCOLOGY	1904	2597	✓	GREEN, IRA	IMMUNOLOGY	1926	4329
*	DUBOIS, JACQUES EMILE	PHYSICAL CHEM	1920	2798		GREEN, MAURICE	MOLEC BIOL	1926	3554
	DUDRICK, STANLEY J	SURGERY	1935	2535	*	GREEN, MICHAEL	INORGANIC CHEM	1934	2620
*	DUESBERG, PETER H	VIROLOGY	1936	3071		GREENGARD, PAUL	CELL BIOL	1925	8033
	DUKE, CHARLES BRYAN	PHYSICS	1938	2965		GREINER, WALTER A	PHYSICS	1935	3299
	DULBECCO, RENATO	ONCOLOGY	1914	2921	*	GREY, HOWARD M	PATHOLOGY	1932	4545
	DURIG, JAMES ROBERT	INORGANIC CHEM	1935	3136		GRODSKY, GEROLD MORTON	ENDOCRINOLOGY	1927	2761
	DUSTAN, HARRIET PEARSON	CARDIOLOGY	1920	2499	*	GROS, FRANCOIS	MOLEC BIOL	1925	2491
	DUTTON, RICHARD WILLIAM	IMMUNOLOGY	1930	3568		GROSS, DAVID JONATHAN	PHYSICS	1941	2964
	EASTMAN, DEAN E	PHYSICS	1940	2891	*	GROSS, JEROME	BIOCHEMISTRY	1917	2546
	EDELHOCH, HAROLD	BIOCHEMISTRY	1922	2644		GROSSMAN, MORTON IRVIN	PHYSIOLOGY	1919	8693
*	EDELMAN, GERALD MAURICE	IMMUNOLOGY	1929	7975		GROVER, PHILIP L	ONCOLOGY	1933	3158
	ELIEL, ERNEST LUDWIG	ORGANIC CHEM	1921	2981		GRUMBACH, MELVIN MALCOLM	ENDOCRINOLOGY	1925	2867
✓	ENGEL, WILLIAM KING	NEUROLOGY	1930	4031		GUGGENHEIM, HOWARD J	INORGANIC CHEM	1923	2673
	EPSTEIN, STEPHEN E	CARDIOLOGY	1935	6243		GUILLEMIN, ROGER	ENDOCRINOLOGY	1924	5884
*	ERICSSON, JAN LARS-ERIK	PATHOLOGY	1932	3055		GURSKY, HERBERT	ASTRONOMY	1930	3258
*	ERNSTER, LARS	BIOCHEMISTRY	1920	3592		HABER, EDGAR	IMMUNOLOGY	1932	5650
	ESTABROOK, RONALD WINFIELD	BIOCHEMISTRY	1926	4314		HAGEMAN, RICHARD HARRY	PLANT SCIENCES	1917	2687
	EXTON, JOHN H	ENDOCRINOLOGY	1933	3143		HAKANSON, ROLF	PHARMACOLOGY	1937	2563
*	EYLAR, EDWIN HAROLD	BIOCHEMISTRY	1934	3293		HALL, REGINALD	ENDOCRINOLOGY	1931	3132
	FAHEY, JOHN LESLIE	IMMUNOLOGY	1924	4283	*	HALPERN, JACK	INORGANIC CHEM	1925	2672
	FAIRBANKS, GRANT	CELL BIOL	1940	3210	✓	HAMBERG, MATS	BIOCHEMISTRY	1944	4915
	FALCK, BENGT O F	HISTOLOGY	1927	2721		HAMILTON, WALTER CLARK	PHYSICAL CHEM	1931-73	3815
	FARBER, EMMANUEL	PATHOLOGY	1918	2875		HAMMOND, GEORGE SIMMS	ORGANIC CHEM	1921	2656
	FARQUHAR, MARILYN GIST	CELL BIOL	1928	3512	✓	HANSCH, CORWIN H	ORGANIC CHEM	1918	3928
	FASMAN, GERALD DAVID	BIOCHEMISTRY	1925	4228		HANSEN, OLE	PHYSICS	1934	2439
*	FAWCETT, DON WAYNE	HISTOLOGY	1917	2472		HANSON, GAIL G	PHYSICS	1947	3242
	FEFER, ALEXANDER	IMMUNOLOGY	1938	2775		HARARI, H	PHYSICS	1940	2492
	FEHSENFELD, FRED C	GEOPHYSICS	1934	3682		HARDMAN, JOEL GRIFFETH	PHARMACOLOGY	1933	2973
	FEIGENBAUM, HARVEY	CARDIOLOGY	1933	3123		HARRIS, HARRY	GENETICS	1919	3729
	FELDMAN, GARY JAY	PHYSICS	1942	3452		HARRIS, HENRY	CELL BIOL	1925	2661
	FELDMANN, MARC	IMMUNOLOGY	1944	3750	*	HARRISON, DONALD C	CARDIOLOGY	1934	4196
✓	FELIG, PHILIP	ENDOCRINOLOGY	1936	3961		HARTLEY, BRIAN SELBY	MOLEC BIOL	1926	3209
	FELSENFELD, GARY	MOLEC BIOL	1929	3200	✓	* HARTLEY, JANET WILSON	VIROLOGY	1928	4208
*	FERGUSON, ELDON EARL	AERONOMY	1926	3445	*	HASZELDINE, ROBERT NEVILLE	ORGANOMET CHEM	1925	2684
	FIELD, EPHRAM JOSHUA	NEUROLOGY	1915	2670		HAWTHORNE, MARION FREDERICK	INORGANIC CHEM	1928	2748
	FINCH, CLEMENT ALFRED	HEMATOLOGY	1915	2951		HAYAISHI, OSAMU	ENZYMOLOGY	1920	3437
	FINLAND, MAXWELL	MICROBIOL	1902	3252		HAYFLICK, LEONARD	CELL BIOL	1928	2824
	FISCHER, ERNST OTTO	ORGANOMET CHEM	1918	3472	*	HAYON, ELIE	PHYSICAL CHEM	1932	2523
	FISHER, BERNARD	ONCOLOGY	1918	2763		HEEGER, ALAN J	PHYSICS	1936	3450
	FISHER, DELBERT A	ENDOCRINOLOGY	1928	2476	✓	HEHRE, WARREN J	THEORETICAL CHEM	1945	4856
*	FISHER, EDWIN RALPH	PATHOLOGY	1923	2854		HEIDELBERGER, CHARLES	ONCOLOGY	1920	4214
	FISHER, MICHAEL ELLIS	PHYSICS	1931	4604	*	HEILBRONNER, EDGAR	ORGANIC CHEM	1921	3156
	FISHMAN, WILLIAM HAROLD	ONCOLOGY	1914	2620		HELFANT, RICHARD H	CARDIOLOGY	1937	2484
	FLEISHER, SIDNEY	MOLEC BIOL	1930	2925		HELINSKI, DONALD RAYMOND	GENETICS	1933	3035
	FLORY, PAUL JOHN	PHYSICAL CHEM	1910	5087	*	HELLMAN, LEON	ONCOLOGY	1921	3112
	FLYGARE, WILLIS H	CHEM PHYS	1936	2790		HELLSTROM, INGEGERD E	IMMUNOLOGY	1932	6500
*	FOLKERS, KARL AUGUST	ORGANIC CHEM	1906	2999		HELLSTROM, KARL ERIK	IMMUNOLOGY	1934	6145
	FORSHAM, PETER HUGH	ENDOCRINOLOGY	1915	3449	*	HENDERSON, EDWARD S	ONCOLOGY	1932	2609
	FOUTS, JAMES RALPH	PHARMACOLOGY	1929	2504		HENDERSON, JOSEPH F	BIOCHEMISTRY	1933	2605
	FRANK, MICHAEL M	IMMUNOLOGY	1937	2698	*	HENLE, GERTRUDE	VIROLOGY	1912	6816
	FRANKE, WERNER W	CELL BIOL	1940	3031	*	HENLE, WERNER	VIROLOGY	1910	6223
	FRANKLIN, EDWARD CLAUS	IMMUNOLOGY	1926	2854		HENNEY, CHRISTOPHER SCOT	IMMUNOLOGY	1941	2732
	FREDRICKSON, DONALD SHARP	GENETICS	1924	9499	✓	HERBERMAN, RONALD B	ONCOLOGY	1940	5027
	FREEDMAN, SAMUEL ORKIN	IMMUNOLOGY	1928	3148		HERBERT, VICTOR DANIEL	HEMATOLOGY	1927	4716
*	FREI, EMIL	ONCOLOGY	1924	3909		HEREMANS, JOSEPH FELIX	IMMUNOLOGY	1927-75	3524
	FREIREICH, EMIL J	ONCOLOGY	1927	4735	✓	HERSH, EVAN MANUEL	IMMUNOLOGY	1935	4324
✓	FRIDOVICH, IRWIN	ENZYMOLOGY	1929	5141		HERZENBERG, LEONARD ARTHUR	IMMUNOLOGY	1931	3569
	FRIEDBERG, CARL E	PHYSICS		2964		HILL, ROBERT LEE	BIOCHEMISTRY	1928	2919
*	FRIEDMAN, ROBERT MORRIS	VIROLOGY	1932	2484	*	HILLEMAN, MAURICE RALPH	VIROLOGY	1919	3447
	FRIESEN, HENRY GEORGE	ENDOCRINOLOGY	1934	2845		HIRSCH, JAMES GERALD	CELL BIOL	1922	2803
	FRYBERGER, DAVID	PHYSICS	1931	2851		HIRSCHHORN, KURT	GENETICS	1926	3070
	FUDENBERG, H HUGH	IMMUNOLOGY	1928	9602		HOBBS, JOHN RAYMOND	PATHOLOGY	1929	2708
	FUKE, KJELL G	CELL BIOL	1938	13319		HOFFBRAND, ALLAN VICTOR	HEMATOLOGY	1935	2926
	GALL, JOSEPH GRAFTON	MOLEC BIOL	1928	2465		HOFFMAN, BRIAN F	CARDIOLOGY	1925	3096
✓	GALLO, ROBERT C	CELL BIOL	1937	4140		HOFFMANN, ROALD	INORGANIC CHEM	1937	7340
	GARATTINI, SILVIO	PHARMACOLOGY	1928	2833		HOFMANN, ALAN F	GASTROENTEROL	1931	4963
	GARITO, ANTHONY FRANK	PHYSICS	1939	2935	*	HOKFELT, TOMAS	NEUROPHARMACOL	1940	8268
	GASSMAN, PAUL G	ORGANIC CHEM	1935	2997		HOLBOROW, ERIC JOHN	IMMUNOLOGY	1918	3314
✓	* GELBOIN, HARRY VICTOR	BIOCHEMISTRY	1929	4169		HOLLAND, JAMES FREDERICK	ONCOLOGY	1925	3743
	GERGELY, JOHN	BIOCHEMISTRY	1919	2455		HOLM, OLOF GORAN	HEMATOLOGY	1930	3907
	GERSHON, RICHARD K	IMMUNOLOGY	1932	2746		HOLM, RICHARD HADLEY	INORGANIC CHEM	1934	2954
	GEWURZ, HENRY	IMMUNOLOGY	1936	2930		HOLTZER, HOWARD	CELL BIOL	1922	3069
	GIACCONI, RICCARDO	ASTRONOMY	1931	2987		HONG, RICHARD	IMMUNOLOGY	1929	2661
	GIACOMELLI, GIORGIO M	PHYSICS	1931	2483		HORECKER, BERNARD LEONARD	BIOCHEMISTRY	1914	3190
	GIBBONS, RONALD JOHN	MICROBIOL	1932	2447		HOUSE, HERBERT O	ORGANIC CHEM	1929	2914
	GIBLETT, ELOISE ROSALIE	HEMATOLOGY	1921	2447		HSU, TAO-CHIUH	GENETICS	1917	2820
*	GIBSON, QUENTIN HOWIESON	PHYSIOLOGY	1918	2588		HUBEL, DAVID HUNTER	PHYSIOLOGY	1926	3764
✓	* GILDEN, RAYMOND VICTOR	IMMUNOLOGY	1935	4391		HUEBNER, ROBERT JOSEPH	ONCOLOGY	1914	7536
*	GILLESPIE, DAVID H	GENETICS	1940	2709		HUISGEN, ROLF K J	ORGANIC CHEM	1920	5087
	GILLETTE, JAMES ROBERT	PHARMACOLOGY	1928	4907	*	HUISMAN, TITUS HENDRIK JAN	BIOCHEMISTRY	1923	3082

	HURWITZ, JERARD	MOLEC BIOL	1928	3297
	ICEN, ICKO	ASTROPHYSICS	1937	2489
	IDERS, JAMES ARTHUR	INORGANIC CHEM	1930	7575
	INBAR, MICHAEL	CELL BIOL	1939	2577
	INGBAR, SIDNEY HAROLD	ENDOCRINOLOGY	1925	2977
	INGOLD, KEITH U	ORGANIC CHEM	1929	2619
	ISHIZAKA, KIMISHIGE	IMMUNOLOGY	1925	5102
	ISHIZAKA, TERUKO	IMMUNOLOGY	1926	3508
	ISSELBACHER, KURT JULIUS	GASTROENTEROL	1925	4771
	IVANKOVIC, S	ONCOLOGY	1931	2485
	IVERSEN, LESLIE L	PHARMACOLOGY	1937	8397
	IZAWA, SEIKIEHA	PLANT SCIENCES	1926	2454
	JACKIW, ROMAN WLADIMIR	PHYSICS	1939	2932
	JACKSON, RICHARD LEE	BIOCHEMISTRY	1939	2784
	JACOB, FRANCOIS	MOLEC BIOL	1920	3603
	JAMES, THOMAS NAUM	CARDIOLOGY	1925	2539
	JEAN-MARIE, BERNARD	PHYSICS	1940	2445
	JENCKS, WILLIAM PLATT	ORGANIC CHEM	1927	3527
✓	* JERINA, DONALD M	ORGANIC CHEM	1940	5033
	JOHANSSON, S G O	IMMUNOLOGY	1938	3855
	* JOHNSON, BRIAN F G	ORGANIC CHEM	1938	3045
	JOHNSON, GEORGE S	BIOCHEMISTRY	1943	2557
	JOHNSON, LEONARD ROY	PHYSIOLOGY	1942	2760
	JOHNSTON, GRAHAM ALLEN	PHARMACOLOGY	1938	3555
	JOKLIK, WOLFGANG KARL	VIROLOGY	1926	3084
	JONDAL, MIKAEL B	IMMUNOLOGY	1943	3533
	* JONES, EDWARD GEORGE	NEUROBIOLOGY	1939	2523
	JONSSON, GOSTA LARS	HISTOLOGY	1941	3290
	JORTNER, JOSHUA	PHYSICS	1933	5449
	JOUVET, MICHEL	PHYSIOLOGY	1925	3137
	KABACK, HOWARD RONALD	MOLEC BIOL	1936	3333
	KABAT, ELVIN ABRAHAM	IMMUNOLOGY	1914	3020
	KADYK, JOHN AMOS	PHYSICS	1929	3400
	KAKKAR, V V	CARDIOLOGY	1937	2554
	* KAMETANI, TETSUJI	PHARMACOLOGY	1917	3741
	KANNEL, WILLIAM B	CARDIOLOGY	1923	2518
	KAPLAN, HENRY SEYMOUR	ONCOLOGY	1918	5825
	KAPLAN, NATHAN ORAM	ENZYMOLOGY	1917	4230
	KAPLAN, SELNA L	ENDOCRINOLOGY	1927	2699
	KAPPAS, ATTALLAH	PHARMACOLOGY	1926	2613
	KARLE, ISABELLA LUGOSKI	BIOPHYSICS	1921	2872
	KARNOVSKY, MORRIS JOHN	CELL BIOL	1926	11427
	* KARPLUS, MARTIN	PHYSICAL CHEM	1930	37277
	KASTIN, ABBA J	ENDOCRINOLOGY	1934	5460
	KATCHALSKI-KATZIR, EPHRAIM	BIOPHYSICS	1916	2613
	KATO, RYUICHI	PHARMACOLOGY	1930	2506
✓	KATRITZKY, ALAN ROY	ORGANIC CHEM	1928	4385
	KATZ, BERNARD	BIOPHYSICS	1911	3049
	KATZ, DAVID H	IMMUNOLOGY	1943	3544
	* KAUFMAN, SEYMOUR	ENZYMOLOGY	1924	2620
	KEARNS, DAVID R	BIOPHYSICS	1935	3695
	KELLEY, WILLIAM NIMMONS	GENETICS	1939	3528
	KHORANA, HAR GOBIND	ORGANIC CHEM	1922	4409
	* KING, ROBERT BRUCE	ORGANOMET CHEM	1938	4467
	KIPNIS, DAVID MORRIS	CELL BIOL	1927	5676
	KIRBY, WILLIAM M M	MICROBIOL	1914	2568
	KIVIRIKKO, KARI ILKKA	BIOCHEMISTRY	1937	2501
	KLEBANOFF, SEYMOUR JOSEPH	IMMUNOLOGY	1927	2476
	KLEEMAN, CHARLES RICHARD	PHYSIOLOGY	1923	2552
	KLEIN, EVA	IMMUNOLOGY	1925	3910
	KLEIN, GEORGE	IMMUNOLOGY	1925	10347
	KLEIN, JAN	GENETICS	1936	3677
	KLINGENBERG, MARTIN ERNST	BIOPHYSICS	1928	2548
	KLUG, AARON	MOLEC BIOL	1926	3308
	* KNOBIL, ERNST	ENDOCRINOLOGY	1926	2887
	KOCH-WESER, JAN	PHARMACOLOGY	1927	3764
	KOCHI, JAY KAZUO	ORGANOMET CHEM	1928	4084
	KODICEK, EGON HYNEK	BIOCHEMISTRY	1908	2623
	KOPIN, IRWIN J	PHARMACOLOGY	1929	6646
	* KOPROWSKI, HILARY	MICROBIOL	1916	4229
	KORN, EDWARD DAVID	CELL BIOL	1928	2480
	KORNBERG, ARTHUR	MOLEC BIOL	1918	5275
	* KOSHLAND, DANIEL EDWARD	BIOCHEMISTRY	1920	5208
	KREBS, EDWIN GERHARD	BIOCHEMISTRY	1918	4578
	KREBS, HANS ADOLF	BIOCHEMISTRY	1900	4670
	KRISHNA, GOPAL IYER	PHARMACOLOGY	1934	3050
	KRNJEVIC, KRESIMIR	PHYSIOLOGY	1927	2821
	KRUGMAN, SAUL	VIROLOGY	1911	2811
	KUHAR, MICHAEL JOSEPH	NEUROPHARMACOL	1944	2550
	KUNKEL, HENRY GEORGE	IMMUNOLOGY	1916	9134
	KUNTZMAN, RONALD GROVER	PHARMACOLOGY	1933	3691
	KUO, JYH-FA	PHARMACOLOGY	1933	3946
	* KUPCHAN, S MORRIS	ORGANIC CHEM	1922-76	2997
	KURLAND, C G	MOLEC BIOL	1936	2548
	LACY, PAUL ESTON	PATHOLOGY	1924	2703
✓	LAEMMLI, U K	MOLEC BIOL	1940	5148
	* LANDON, J	PATHOLOGY	1931	2712
	* LANDS, WILLIAM EDWARD M	BIOCHEMISTRY	1930	2441
	LAPPERT, MICHAEL FRANZ	ORGANOMET CHEM	1928	3321
	LARAGH, JOHN HENRY	CARDIOLOGY	1924	5681
	LARDY, HENRY ARNOLD	BIOCHEMISTRY	1917	5064
	LARSEN, RUDOLF REINHOLD	PHYSICS	1929	3111
	LASSEN, NIELS ALEXANDER	PHYSIOLOGY	1926	2995
	LAU, SUN HING	CARDIOLOGY	1926	2943
✓	LAURELL, CARL-BERTIL	IMMUNOLOGY	1906	4283
	LEBLOND, CHARLES PHILIPPE	HISTOLOGY	1910	4024
	LEDER, PHILIP	MOLEC BIOL	1934	3980
	LEDERER, EDGAR	IMMUNOLOGY	1908	2670
	LEE, BENJAMIN W	PHYSICS	1935-77	3529
	LEE, TSUNG-DAO	PHYSICS	1926	2038
	LEES, ROBERT SPENCER	CARDIOLOGY	1934	6410
	LEFKOWITZ, ROBERT JOSEPH	PHARMACOLOGY	1943	2991
	LEHMANN, HERMANN	MOLEC BIOL	1910	3780
	LENN, JEAN-MARIE	PHYSICAL CHEM	1938	2558
	LEHNINGER, ALBERT LESTER	BIOCHEMISTRY	1917	3447
	LEONARD, NELSON JORDAN	BIOCHEMISTRY	1916	3080
	LE PICHON, XAVIER	GEOPHYSICS	1937	2488
	LEVER, ANTHONY F	PHYSIOLOGY	1929	3397
✓	LEVIN, WAYNE M	PHARMACOLOGY	1940	4690
✓	* LEVINE, LAWRENCE	IMMUNOLOGY	1924	4223
	LEVINE, RAPHAEL DAVID	PHYSICS	1938	2676
	LEVY, GERHARD	PHARMACOLOGY	1928	4266
	LEVY, ROBERT I	CARDIOLOGY	1937	10784
✓	LEWIS, JACK	INORGANIC CHEM	1928	5141
	LI, CHOH HAO	PHARMACOLOGY	1913	4773
✓	LICHTENSTEIN, LAWRENCE M	IMMUNOLOGY	1934	3955
✓	* LIDDLE, GRANT WINDER	ENDOCRINOLOGY	1921	4743
	LIEBER, CHARLES SAUL	PATHOLOGY	1931	5300
	LINNANE, ANTHONY W	BIOCHEMISTRY	1930	2916
	LIPMANN, FRITZ A	MICROBIOL	1899	3173
	* LIPSCOMB, WILLIAM NUNN	PHYSICAL CHEM	1919	4420
	LIPSETT, MORTIMER BROADWIN	ENDOCRINOLOGY	1921	3512
	LOOISH, HARVEY FRANKLIN	CELL BIOL	1941	3517
	LOENING, ULRICH EDUARD	MOLEC BIOL	1931	3626
	LONDON, WILLIAM THOMAS	ONCOLOGY	1932	2878
	LOWN, BERNARD	CARDIOLOGY	1921	3434
	LOWRY, OLIVER HOWE	BIOCHEMISTRY	1910	2570
	LU, ANTHONY Y H	PHARMACOLOGY	1937	3578
	LUDERITZ, OTTO	MICROBIOL	1920	2980
	LUFT, ROLF	ENDOCRINOLOGY	1914	2472
	LUTH, VERA	PHYSICS	1943	3084
	* LYNCH, HARVEY LEE	PHYSICS	1939	2742
	MACKANESS, GEORGE BELLAMY	IMMUNOLOGY	1922	3078
	MACKAY, IAN REAY	IMMUNOLOGY	1922	3330
	MACKLEM, PETER TIFFANY	PHYSIOLOGY	1931	3247
	MAHLER, HENRY RALPH	CELL BIOL	1921	2528
	* MAIZEL, JACOB V	MOLEC BIOL	1934	5596
	MALAISSE-LAGAE, FRANCINE	ENDOCRINOLOGY	1936	2606
	MALAISSE, WILLY JEAN	ENDOCRINOLOGY	1936	2957
	MANDEL, PAUL	CELL BIOL	1908	5955
	MANN, JOSEPH BIRD	PHYSICS	1923	2528
	MARCHALONIS, JOHN JACOB	IMMUNOLOGY	1940	2733
	MARCHESI, VINCENT T	PATHOLOGY	1935	3395
	MARCUS, RUDOLPH ARTHUR	PHYSICAL CHEM	1923	2525
	* MAROKO, PETER RICHARD	CARDIOLOGY	1936	3102
	MARTIN, GEORGE REILLY	PHARMACOLOGY	1933	2551
	MASON, DEAN TOWLE	CARDIOLOGY	1932	5790
	MASON, RONALD	INORGANIC CHEM	1930	3130
	MASSEY, VINCENT	ENZYMOLOGY	1926	3221
	MASSRY, SHAUL G	PHYSIOLOGY	1930	2965
✓	MATHE, GEORGES	CELL BIOL	1922	3951
	* MAYER, JAMES WALTER	PHYSICS	1930	2576
	* MCCULLOCH, ERNEST A	CELL BIOL	1926	3161
	MCCANN, SAMUEL MCDONALD	ENDOCRINOLOGY	1925	5528
	* MCCARTHY, BRIAN JOHN	MICROBIOL	1934	3943
	MCCONNELL, HARDEN MARSDEN	BIOPHYSICS	1927	5897
✓	MCDEVITT, HUGH O	IMMUNOLOGY	1930	4366
	MCELROY, MICHAEL BRENDAN	INORGANIC CHEM	1939	2736
	MCGUIGAN, JAMES E	GASTROENTEROL	1931	2558
	MCKUSICK, VICTOR A	GENETICS	1921	2716
	MCLAFFERTY, FRED WARREN	ORGANIC CHEM	1923	3018
	MEANS, ANTHONY R	CELL BIOL	1941	2555
	MEISTER, ALTON	BIOCHEMISTRY	1922	3691
	MEITES, JOSEPH	ENDOCRINOLOGY	1913	5231
	MELMON, KENNETH LLOYD	CELL BIOL	1934	3427
	MELNICK, JOSEPH LOUIS	VIROLOGY	1914	5427
	* MERGENHAGEN, STEPHEN EDWARD	IMMUNOLOGY	1930	3188
	MERIGAN, THOMAS CHARLES	VIROLOGY	1934	3544
	MERRILL, JOHN PUTNAM	IMMUNOLOGY	1917	5229
	METCALF, DONALD	HEMATOLOGY	1929	5099
	* MICHAEL, ALFRED FREDERICK	NEPHROLOGY	1928	3012
	MICKEY, MAX RAY	IMMUNOLOGY	1923	3127
	* MIDGLEY, A REES	ENDOCRINOLOGY	1933	5874
	MIGEON, CLAUDE JEAN	ENDOCRINOLOGY	1923	3274
	MILEDI, RICARDO	BIOPHYSICS	1927	5059
	MILIC-EMILI, JOSEPH	PHYSIOLOGY	1931	2439
	MILLER, EDWARD JOSEPH	BIOCHEMISTRY	1935	3140
	MILLER, ELIZABETH CAVERT	ONCOLOGY	1920	3044
	MILLER, JACQUES FRANCIS ALBERT	IMMUNOLOGY	1931	6562
✓	MILLER, JAMES ALEXANDER	ONCOLOGY	1915	5007
	MILLER, WILLIAM HUGHES	PHYSICS	1941	2602
	MILSTEIN, CESAR	IMMUNOLOGY	1927	3130
	MIRSKY, ALFRED EZRA	CELL BIOL	1900-74	2458
	MISLOW, KURT MARTIN	ORGANIC CHEM	1923	3202
	MITCHELL, PETER DENNIS	BIOCHEMISTRY	1920	3537
	MOLLER, GORAN	IMMUNOLOGY	1936	5315
	MONCADA, S	PHARMACOLOGY	1944	2507
	MONOD, JACQUES LUCIEN	MOLEC BIOL	1910-76	2973
	* MOORE, C BRADLEY	PHYSICS	1939	2719
	MOORE, GEORGE EUGENE	ONCOLOGY	1920	4009
	MOREHOUSE, CHARLES CONOVER	PHYSICS	1942	2944
	* MORINO, YONEZO	PHYSICAL CHEM	1908	2772
	MORRE, D JAMES	PLANT SCIENCES	1935	3065
	MORRIS, HAROLD PAUL	ONCOLOGY	1900	4759
	* MORROW, ANDREW GLENN	CARDIOLOGY	1922	4160
	MORTON, DONALD CHARLES	ASTROPHYSICS	1933	2701
✓	* MORTON, DONALD LEE	ONCOLOGY	1934	4214
	MOTT, NEVILL FRANCIS	PHYSICS	1905	3128
	* MUETTERTIES, EARL LEONARD	INORGANIC CHEM	1927	3789
	* MULLER-EBERHARD, HANS J	IMMUNOLOGY	1927	7579
	MULLER, ACHIM	PHYSICS	1938	3508
	MUNRO, HAMISH NISBET	BIOCHEMISTRY	1915	4299
	MURPHY, BEVERLY ELAINE P	ENDOCRINOLOGY	1929	2565
	MURPHY, DENNIS LUKE	NEUROPHARMACOL	1929	2624
	* MUSTARD, JAMES FRASER	PATHOLOGY	1927	5442
	NAHMIAS, ANDRE JOSEPH	VIROLOGY	1930	3198
	NAJARIAN, JOHN SARKIS	IMMUNOLOGY	1927	3446
	NAKANISHI, KOJI	ORGANIC CHEM	1925	2593
	* NATHAN, DAVID GORDON	HEMATOLOGY	1929	3269
	* NATHANS, DANIEL	MICROBIOL	1928	2781
	* NATVIG, JACOB BIRGER	IMMUNOLOGY	1934	2726
	NEBERT, DANIEL WALTER	GENETICS	1940	3226
	NEFF, NORTON HERBERT	PHARMACOLOGY	1935	2590
	NESS, NORMAN FREDERICK	PHYSICS	1933	2443

	NETA, PEDATSUR	ORGANIC CHEM	1938	2460
	NEVILLE, DAVID MICHAEL	MOLEC BIOL	1934	3821
✔	NICOLSON, GARTH LAMB	CELL BIOL	1943	6047
	NILSSON, INGA MARIE	HEMATOLOGY	1923	2914
*	NIRENBERG, MARSHALL WARREN	GENETICS	1927	2914
	NISHIMURA, SUSUMU	MOLEC BIOL	1931	2638
	NISWENDER, GORDON DEAN	ENDOCRINOLOGY	1940	3749
	NOMURA, MASAYASU	MOLEC BIOL	1927	5174
	NORMAN, ANTHONY WESTCOTT	BIOCHEMISTRY	1938	3432
	NORTHCOTE, DONALD HENRY	CELL BIOL	1921	2945
	NOSSAL, GUSTAV J V	IMMUNOLOGY	1931	3409
	NOVIKOFF, ALEX BENJAMIN	PATHOLOGY	1913	2753
	NOZAKI, MITOSI	ORGANIC CHEM	1922	2680
✔	*NUSSENZWEIG, VICTOR*	*IMMUNOLOGY*	*1928*	*3957*
	O'BRIEN, JOHN S	GENETICS	1934	3721
✔	* O'MALLEY, BERT W	ENDOCRINOLOGY	1936	6044
	OCHOA, SEVERO	BIOCHEMISTRY	1905	2462
	ODELL, WILLIAM DOUGLAS	PHYSIOLOGY	1929	4523
	OHNO, SUSUMU	GENETICS	1928	2702
*	OKE, JOHN BEVERLEY	ASTRONOMY	1928	2437
	OLAH, GEORGE ANDREW	ORGANIC CHEM	1927	7910
*	OLD, LLOYD JOHN	ONCOLOGY	1933	7892
	OLSON, LARS O	NEUROBIOLOGY	1942	2597
	OPPENHEIM, JOOST J	IMMUNOLOGY	1934	3631
	ORCI, LELIO	HISTOLOGY	1937	3600
	ORLOFF, JACK	PHYSIOLOGY	1921	2531
	ORRENIUS, STEN G	PHARMACOLOGY	1937	2481
	OSBORN, JOHN ANTHONY	INORGANIC CHEM	1939	2557
	OSBORN, MARY	CELL BIOL	1940	10376
	OSKI, FRANK A	HEMATOLOGY	1932	2816
	OSTRIKER, JEREMIAH P	ASTROPHYSICS	1937	2469
	OVCHINNIKOV, YU A	BIOCHEMISTRY	1934	2458
	OWEN, CHARLES ARCHIBALD	HEMATOLOGY	1915	2475
	OWMAN, CHRISTER SVEN OLLE	HISTOLOGY	1939	3448
	PACKER, LESTER	*BIOPHYSICS*	*1929*	*2650*
	PACKHAM, MARIAN AITCHISON	HEMATOLOGY	1927	3233
	PAGE, IRVINE HEINLY	PHYSIOLOGY	1901	2715
	PALADE, GEORGE E	CELL BIOL	1912	7915
	PALKOVITS, MIKLOS	NEUROPHARMACOL	1933	2783
	PAPHADJOPOULOS, DEMETRIOS P	MOLEC BIOL	1934	3496
	PAQUETTE, LEO ARMAND	ORGANIC CHEM	1934	5116
	PARDEE, ARTHUR BECK	CELL BIOL	1921	3110
	PARK, CHARLES RAWLINSON	PHYSIOLOGY	1916	3877
✔	PARKER, CHARLES WARD	IMMUNOLOGY	1930	3896
	PARKS, W P	IMMUNOLOGY	1941	2568
	PARMLEY, WILLIAM W	CARDIOLOGY	1936	3512
	PASTAN, IRA HARRY	BIOCHEMISTRY	1931	8090
	PATERSON, JAMES MCEWAN	PHYSICS	1937	3117
	PAUL, JOHN	MOLEC BIOL	1922	3541
	PAUL, WILLIAM ERWIN	IMMUNOLOGY	1936	6082
	PEARSE, ANTHONY GUY EVERSON	ENDOCRINOLOGY	1916	6151
	PEARSON, RALPH GOTTFRID	INORGANIC CHEM	1919	2901
*	PENMAN, SHELDON	MOLEC BIOL	1930	7539
*	PERL, MARTIN LOUIS	PHYSICS	1927	3533
✔	PERLMANN, PETER	IMMUNOLOGY	1919	4373
	PERRY, ROBERT PALESE	MOLEC BIOL	1931	3577
	PERUTZ, MAX FERDINAND	MOLEC BIOL	1914	4821
	PETERLIN, ANTON	PHYSICS	1908	3073
	PHILIPSON, LENNART	MICROBIOL	1929	2911
	PHILLIPS, DAVID CHILTON	MOLEC BIOL	1924	2481
	PHILLIPS, JAMES CHARLES	PHYSICS	1933	2763
	PHILLIPS, R J	PHYSICS	1930	2627
	PHILLIPS, ROBERT ALLAN	IMMUNOLOGY	1937	2487
	PIEZ, KARL ANTON	BIOCHEMISTRY	1924	3067
	PITOT, HENRY C	ONCOLOGY	1930	2678
	PITT, BERTRAM	CARDIOLOGY	1932	2626
	PLETSCHER, ALFRED	NEUROPHARMACOL	1917	3674
	POLAK, JULIA MARGARET	HISTOLOGY	1939	3158
	POLANYI, JOHN CHARLES	PHYSICAL CHEM	1929	2831
*	POPLE, JOHN ANTHONY	THEORETICAL CHEM	1925	12714
	POPPER, HANS	PATHOLOGY	1903	3367
	PORATH, JERKER OLOF	BIOCHEMISTRY	1921	3349
✔	PORTE, DANIEL	ENDOCRINOLOGY	1931	4584
	PORTER, JOHN CHARLES	PHYSIOLOGY	1925	2730
*	PORTER, JOHN WILLARD	BIOCHEMISTRY	1915	2619
*	PORTER, KEITH ROBERTS	MOLEC BIOL	1912	2635
	PORTER, KENDRICK ARTHUR	PATHOLOGY	1925	2761
*	POSTE, GEORGE HENRY	PATHOLOGY	1944	2565
*	POTTER, MICHAEL	ONCOLOGY	1924	3042
	POTTER, VAN RENSSELAER	CELL BIOL	1911	3754
	POTTS, JOHN THOMAS	ENDOCRINOLOGY	1932	5402
	POWELL, THOMAS PHILIP STROUD	NEUROLOGY	1923	3646
	PRESSMAN, BERTON CHARLES	PHARMACOLOGY	1926	2595
*	PRESSMAN, DAVID	IMMUNOLOGY	1916	3184
	PREUSSMANN, R	ONCOLOGY	1928	2692
	PRINCE, ALFRED M	VIROLOGY	1928	3754
*	PROCKOP, DARWIN J	BIOCHEMISTRY	1929	5555
✔	PURCELL, ROBERT HARRY	VIROLOGY	1935	4406
✔	QUIE, PAUL GERHARDT	IMMUNOLOGY	1925	3877
	RABINOWITZ, MURRAY	MOLEC BIOL	1927	2532
*	RACKER, EFRAIM	BIOCHEMISTRY	1913	6206
✔	RAFF, MARTIN C	CELL BIOL	1938	4499
*	RAISZ, LAWRENCE GIDEON	ENDOCRINOLOGY	1925	2569
	RAMIREZ, FAUSTO	ORGANIC CHEM	1923	2999
	RAPP, FRED	VIROLOGY	1929	3903
	RAPP, HERBERT JOSEPH	IMMUNOLOGY	1923	4397
	RASMUSSEN, HOWARD	CELL BIOL	1925	4558
	RATNOFF, OSCAR DAVIS	HEMATOLOGY	1916	2945
	RAWLS, WILLIAM EDGAR	VIROLOGY	1933	3112
	RAZIN, SHMUEL	MICROBIOL	1929	2451
	RECTOR, FLOYD CLINTON	PHYSIOLOGY	1929	3623
	REDDING, TOMMIE W	ENDOCRINOLOGY	1933	2497
	REEDER, DON DAVID	PHYSICS	1935	2477
	REESE, THOMAS SARGENT	CELL BIOL	1935	2584
*	REICH, EDWARD	BIOCHEMISTRY	1927	2753
	REICHERT, LEO E	ENDOCRINOLOGY	1932	2913
	REISFELD, RALPH ALFRED	IMMUNOLOGY	1928	3680
*	REMEIKA, J P	PHYSICS	1924	2475
	REMINGTON, JACK SAMUEL	MICROBIOL	1931	3354
*	REMMER, HERBERT	PHARMACOLOGY	1919	3013
	RENOLD, ALBERT ERNST	ENDOCRINOLOGY	1923	2997
*	REYNOLDS, JACQUELINE ANN	BIOPHYSICS	1930	2548
	RICE, STUART ALLEN	PHYSICAL CHEM	1932	3622
	RICH, ALEXANDER	MOLEC BIOL	1924	4811
	RICHARDSON, CHARLES CLIFTON	MOLEC BIOL	1935	3078
	RICHTER, BURTON	PHYSICS	1931	3731
	RIVIER, JEAN E F	ENDOCRINOLOGY	1941	2443
	ROBBINS, JOHN BENNETT	MICROBIOL	1932	2436
	ROBERTS, JOHN D	ORGANIC CHEM	1918	5941
	ROBERTS, WILLIAM CLIFFORD	CARDIOLOGY	1932	3342
	ROBERTSON, J I S	*CARDIOLOGY*	*1928*	*3310*
	ROBINS, ROLAND KENITH	ORGANIC CHEM	1925	4157
	ROBISON, GEORGE ALAN	PHARMACOLOGY	1934	4994
	RODBELL, MARTIN	ENDOCRINOLOGY	1925	4652
	ROEDER, ROBERT G	BIOCHEMISTRY	1942	2748
*	ROITT, IVAN MAURICE	IMMUNOLOGY	1927	4014
	ROIZMAN, BERNARD	VIROLOGY	1929	3290
	ROSEMAN, SAUL	BIOCHEMISTRY	1921	4377
*	ROSEN, FRED SAUL	IMMUNOLOGY	1930	4939
	ROSEN, KENNETH M	CARDIOLOGY	1937	2838
	ROSENBERG, SAUL A	ONCOLOGY	1927	2448
✔	ROSENTHAL, ALAN S	IMMUNOLOGY	1939	3932
✔	ROSS, GRIFF TERRY	ENDOCRINOLOGY	1920	4659
	ROSS, JOHN	CARDIOLOGY	1928	7756
✔	* ROSS, RUSSELL	CELL BIOL	1929	4108
*	ROTH, JESSE	ENDOCRINOLOGY	1934	6987
	ROTH, ROBERT HENRY	PHARMACOLOGY	1939	3276
*	ROWE, DAVID STUART	IMMUNOLOGY	1925	2692
	ROWE, WALLACE PRESCOTT	VIROLOGY	1926	5655
*	RUBBIA, CARLO	PHYSICS	1934	2990
	RUBIN, EMANUEL	PATHOLOGY	1928	2761
	RUBIN, HARRY	CELL BIOL	1926	2508
	RUDDLE, FRANCIS HUGH	GENETICS	1929	2689
	RUDOLPH, ABRAHAM MORRIS	PHYSIOLOGY	1924	2580
*	RUOSLAHTI, ERKKI ILMARI	ONCOLOGY	1940	2003
	RUSSELL, DIANE HADDOCK	PHARMACOLOGY	1935	2458
	RUTTER, WILLIAM J	MOLEC BIOL	1928	4481
	RYAN, KENNETH JOHN	ENDOCRINOLOGY	1926	2478
	SACHS, LEO	ONCOLOGY	1924	7561
	SAH, CHIH-TANG	PHYSICS	1932	2583
	SALPETER, EDWIN ERNEST	ASTRONOMY	1924	2441
*	SALTIN, BENGT	PHYSIOLOGY	1935	2777
*	SAMBROOK, JOE	VIROLOGY		2442
	SAMUELSSON, BENGT	BIOCHEMISTRY	1934	7377
✔	SANDAGE, ALLAN REX	ASTRONOMY	1926	3997
	SANDBERG, AVERY ABA	CELL BIOL	1921	3027
	SANDLER, MERTON	PHARMACOLOGY	1926	2664
	SANGER, FREDERICK	MOLEC BIOL	1918	3194
	SATCHLER, GEORGE RAYMOND	PHYSICS	1926	3103
	SATO, RYO	BIOCHEMISTRY	1923	3388
	SAWYER, CHARLES HENRY	ENDOCRINOLOGY	1915	3341
	SCHAEFER, HENRY FREDERICK	THEORETICAL CHEM	1944	3186
	SCHAFFNER, FENTON	PATHOLOGY	1920	2525
	SCHALCH, DON SYLVESTER	ENDOCRINOLOGY	1929	2529
	SCHALLY, ANDREW VICTOR	ENDOCRINOLOGY	1926	15340
	SCHERAGA, HAROLD ABRAHAM	PHYSICAL CHEM	1921	8062
	SCHERLAG, BENJAMIN J	CARDIOLOGY	1932	2571
	SCHILDKRAUT, JOSEPH JACOB	PSYCHIATRY	1934	3026
	SCHIMKE, ROBERT T	MOLEC BIOL	1932	4810
	SCHLESSINGER, DAVID	MOLEC BIOL	1936	2695
	SCHLEYER, PAUL VON RAGUE	PHYSICAL CHEM	1930	5736
	SCHMELTEKOPF, ARTHUR L	PHYSICS	1932	2530
*	SCHMID, HANS	PHYSICAL CHEM	1917-76	2674
	SCHMIDBAUR, HUBERT	ORGANOMET CHEM	1934	2576
	SCHRAUZER, GERHARD N	INORGANIC CHEM	1932	2663
	SCHULTZ, STANLEY GEORGE	PHYSIOLOGY	1931	3029
	SCHUR, PETER H	IMMUNOLOGY	1933	3561
✔	SCHWARTZ, ARNOLD	PHARMACOLOGY	1929	4526
	SCHWARTZ, ROBERT STEWART	IMMUNOLOGY	1926	2840
*	SCHWITTERS, ROY FREDERICK	PHYSICS	1944	2930
	SCOLNICK, EDWARD M	VIROLOGY	1940	3403
	SEEGMILLER, JARVIS EDWIN	IMMUNOLOGY	1920	4753
	SEEMAN, PHILIP	NEUROLOGY	1934	3276
✔	SEGAL, GERALD A	PHYSICS	1934	4159
	SELA, MICHAEL	IMMUNOLOGY	1924	4785
	SELDIN, DONALD WAYNE	PHYSIOLOGY	1920	2924
✔	SELIGMANN, MAXIME G	HEMATOLOGY	1927	4248
	SELL, STEWART	IMMUNOLOGY	1935	2719
	SETLOW, RICHARD BURTON	BIOPHYSICS	1921	2879
	SEVER, JOHN LOUIS	MICROBIOL	1932	3444
	SEYFERTH, DIETMAR	ORGANOMET CHEM	1929	3749
*	SHAPIRO, ARNOLD L	BIOPHYSICS	1930	2999
	SHARON, NATHAN	BIOCHEMISTRY	1925	3659
*	SHARP, PHILIP ALLEN	MOLEC BIOL	1944	2693
	SHATKIN, AARON JEFFREY	VIROLOGY	1934	3347
	SHAW, BERNARD LESLIE	INORGANIC CHEM	1930	3545
	SHERLOCK, SHEILA	GASTROENTEROL	1918	5670
	SHEVACH, ETHAN MENAHEM	IMMUNOLOGY	1943	2456
✔ *	SHIRANE, GEN	PHYSICS	1924	4124
✔	SHIRLEY, DAVID ARTHUR	PHYSICAL CHEM	1934	4278
	SHREFFLER, DONALD CECIL	GENETICS	1933	2659
*	SHULMAN, NAHUM RAPHAEL	HEMATOLOGY	1925	2892
*	SHULMAN, ROBERT GERSON	CHEM PHYS	1924	3551
	SIEKEVITZ, PHILIP	CELL BIOL	1918	3424
	SIESJO, BO K	NEUROLOGY	1930	2883
	SIMINOVITCH, LOUIS	GENETICS	1920	2655
✔	SIMMONS, RICHARD LAWRENCE	IMMUNOLOGY	1934	4255
✔ *	SIMPSON, WILLIAM TRACEY	THEORETICAL CHEM	1920	4316
✔ *	SIMS, PETER	MOLEC BIOL	1920	4617
	SINGER, SEYMOUR JONATHAN	CELL BIOL	1924	5647
	SINSHEIMER, ROBERT LOUIS	MOLEC BIOL	1920	4162
	SJOERDSMA, ALBERT	PHARMACOLOGY	1924	4758
*	SJOGREN, HANS OLOV	ONCOLOGY	1935	3467
	SJOQVIST, FOLKE F G	PHARMACOLOGY	1933	2667

* SJOVALL, JAN	BIOCHEMISTRY	1928	2814
* SKOOG, FOLKE	PLANT SCIENCES	1908	2501
* SMALL, DONALD MACFARLAND	BIOPHYSICS	1931	3322
SMITH, EMIL L	BIOCHEMISTRY	1911	3812
SMITH, IAN CORMACK PALMER	BIOPHYSICS	1939	2976
✔ SMITH, THOMAS WOODWARD	CARDIOLOGY	1936	4037
* SNYDER, FRED	BIOCHEMISTRY	1931	3172
SNYDER, SOLOMON HALBERT	PHARMACOLOGY	1938	13149
✔ SOBEL, BURTON E	CARDIOLOGY	1937	4534
SOELDNER, JOHN STUART	ENDOCRINOLOGY	1932	2750
SONNENBLICK, EDMUND H	CARDIOLOGY	1932	8301
* SORM, FRANTISEK	ORGANIC CHEM	1913	4890
SPECTOR, SYDNEY	PHARMACOLOGY	1923	3702
SPELLACY, WILLIAM NELSON	ENDOCRINOLOGY	1934	2679
SPICER, SAMUEL SHERMAN	PATHOLOGY	1914	3131
SPICER, WILLIAM EDWARD	PHYSICS	1929	3433
SPIEGELMAN, SOLOMON	MOLEC BIOL	1914	8415
SPIRO, ROBERT GUNTER	BIOCHEMISTRY	1929	3258
* SPRENT, JONATHAN	IMMUNOLOGY	1941	3045
SPURR, ARTHUR RICHARD	PLANT SCIENCES	1915	2716
STADTMAN, EARL REECE	BIOCHEMISTRY	1919	2636
* STANIER, ROGER YATE	MICROBIOL	1916	2506
STARZL, THOMAS E	IMMUNOLOGY	1926	5119
✔ STECK, THEODORE LYLE	BIOCHEMISTRY	1939	4457
STEIN, YECHEZKIEL	CELL BIOL	1926	2436
STEINBERG, ALFRED DAVID	IMMUNOLOGY	1940	2573
STEINBERG, DANIEL	BIOCHEMISTRY	1922	3025
STEINER, ALTON L	CELL BIOL	1936	2585
STEINER, DONALD FREDERICK	ENDOCRINOLOGY	1930	3421
* STEPHENS, FRANK SAMUEL	THEORETICAL CHEM	1931	2789
* STEPHENSON, J R	VIROLOGY	1942	2582
* STEWART, ROBERT F	PHYSICS	1936	5611
STOECKENIUS, WALTHER	BIOPHYSICS	1921	2471
✔ * STONE, FRANCIS GORDON ALBERT	ORGANOMET CHEM	1925	4013
STORB, RAINER F	IMMUNOLOGY	1935	3563
* STROBER, WARREN	IMMUNOLOGY	1937	2821
* STROMINGER, JACK L	VIROLOGY	1925	6312
✔ STUDIER, FREDERICK WILLIAM	MOLEC BIOL	1936	4203
SUGIMURA, TAKASHI	ONCOLOGY	1926	2837
SUMMERSKILL, WILLIAM HEDLEY	GASTROENTEROL	1926-77	2631
✔ SUNDARALINGAM, MUTTAIYA	BIOPHYSICS	1931	4022
SUTHERLAND, EARL WILBUR	PHARMACOLOGY	1915-74	10297
SUTNICK, ALTON IVAN	ONCOLOGY	1928	2798
SUZUKI, KUNIHIKO	NEUROLOGY	1932	2842
SVEJGAARD, ARNE	IMMUNOLOGY	1937	2439
✔ * SWAN, HAROLD JAMES	PHYSIOLOGY	1922	4196
SWEELEY, CHARLES CRAWFORD	ORGANIC CHEM	1930	2851
✔ SYMONS, MARTYN CHRISTIAN R	INORGANIC CHEM	1925	4593
* SZWARC, MICHAEL	PHYSICAL CHEM	1909	2593
SZYBALSKI, WACLAW	MOLEC BIOL	1921	2890
✔ * TAKEUCHI, TOMIO	MICROBIOL	1923	4480
TALAL, NORMAN	IMMUNOLOGY	1934	3550
TAN, ENG M	IMMUNOLOGY	1926	2783
* TANFORD, CHARLES	BIOCHEMISTRY	1921	5924
TAPPEL, ALOYS LOUIS	BIOCHEMISTRY	1926	4258
✔ TASHJIAN, ARMEN HAIG	ENDOCRINOLOGY	1932	3911
* TATA, JAMSHED RUSTOM	BIOCHEMISTRY	1930	2837
TAUBE, HENRY	INORGANIC CHEM	1915	2802
TAYLOR, EDWIN WILLIAM	BIOPHYSICS	1929	3431
TEMIN, HOWARD MARTIN	ONCOLOGY	1934	3570
TERASAKI, PAUL ICHIRO	IMMUNOLOGY	1929	7379
TERRY, WILLIAM DAVID	IMMUNOLOGY	1933	2817
✔ THOENEN, HANS FRIEDRICH E	NEUROLOGY	1928	4506
THOMAS, CHARLES ALLEN	GENETICS	1927	2707
✔ THOMAS, EDWARD DONNALL	ONCOLOGY	1920	4702
TILL, JAMES EDGAR	BIOPHYSICS	1931	3488
* TODARO, GEORGE JOSEPH	ONCOLOGY	1937	8533
TOLBERT, NATHAN EDWARD	PLANT SCIENCES	1919	2731
TOMASI, THOMAS B	IMMUNOLOGY	1927	3315
TOMKINS, GORDON M	BIOCHEMISTRY	1926-75	7252
TRILLING, GEORGE HENRY	PHYSICS	1930	3773
TROST, BARRY M	ORGANIC CHEM	1941	3087
TRUMP, BENJAMIN FRANKLIN	PATHOLOGY	1932	3581
TSO, PAUL ON PONG	BIOPHYSICS	1929	2477
* TURK, JOHN LESLIE	PATHOLOGY	1930	3243
TURKINGTON, ROGER W	ENDOCRINOLOGY	1938	2716
* TURRO, NICHOLAS JOHN	ORGANIC CHEM	1938	3101
UDENFRIEND, SIDNEY	BIOCHEMISTRY	1918	8641
UHR, JONATHAN WILLIAM	IMMUNOLOGY	1927	3525
* UMEZAWA, HAMAO	MICROBIOL	1914	7808
✔ UNANUE, EMIL R	IMMUNOLOGY	1934	5100
UNGER, ROGER HAROLD	ENDOCRINOLOGY	1924	6030
✔ UNGERSTEDT, URBAN	PHARMACOLOGY	1942	4992
URRY, DAN WESLEY	BIOPHYSICS	1935	3386
* UTIGER, ROBERT D	ENDOCRINOLOGY	1931	3304
VAGELOS, PINDAROS ROY	BIOCHEMISTRY	1929	2933
✔ VALE, WYLIE WALKER	NEUROENDOCRINOL	1941	4123
VALLEE, BERT L	BIOCHEMISTRY	1919	4829
VAN DEENEN, LAURENS L M	BIOCHEMISTRY	1928	8267
VAN ROOD, JOHANNES JOSEPH	IMMUNOLOGY	1926	2582
* VAN UITERT, L G	PHYSICS	1922	2460
VANE, JOHN ROBERT	PHARMACOLOGY	1927	9971
VANNUCCI, FRANCOIS M	PHYSICS	1944	2906
VAUGHAN, MARTHA	BIOCHEMISTRY	1926	2572
VENABLE, JOHN HOWARD	CELL BIOL	1929	3241
VENEZIANO, G	PHYSICS	1942	2385
VESELL, ELLIOT S	PHARMACOLOGY	1933	2556
VINOGRAD, JEROME	MOLEC BIOL	1913-78	4185
VINUELA, ELADIO	VIROLOGY	1937	3471
* VOGT, PETER KLAUS	VIROLOGY	1932	3728
WABER, JAMES T	PHYSICS	1920	3586
WAGNER, HENRY NICHOLAS	NUCLEAR MED	1927	4454
WAKSMAN, BRIAN HALSTEAD	IMMUNOLOGY	1919	3405
WALDMANN, THOMAS A	IMMUNOLOGY	1930	4094
* WALLACH, DONALD F H	ONCOLOGY	1926	5623
WALSH, DONALD ARTHUR	BIOCHEMISTRY	1939	2490
* WALSH, JOHN HARLEY	GASTROENTEROL	1938	2997
WALTER, ROBERICH	PHYSIOLOGY	1937-79	2857
✔ WARD, PETER A	PATHOLOGY	1934	4044
WARNER, NOEL L	IMMUNOLOGY	1939	3436
WARREN, KENNETH S	IMMUNOLOGY	1929	2447
WEATHERALL, DAVID JOHN	HEMATOLOGY	1933	3232
WEBER, KLAUS	BIOCHEMISTRY	1936	13427
WEIBEL, EWALD RUDOLF	PHYSIOLOGY	1929	2958
* WEIGLE, WILLIAM O	IMMUNOLOGY	1927	2723
WEINBERG, STEVEN	PHYSICS	1933	7687
WEINSTEIN, LOUIS	MICROBIOL	1909	3031
WEISBURGER, JOHN HANS	PHARMACOLOGY	1921	2457
WEISS, BENJAMIN	PHARMACOLOGY	1937	2588
WEISS, HARVEY JEROME	HEMATOLOGY	1929	3260
WEISSBACH, HERBERT	MOLEC BIOL	1932	3396
WEISSMANN, GERALD	CELL BIOL	1930	5372
WENKERT, ERNEST	ORGANIC CHEM	1925	2637
* WESSELLS, NORMAN KEITH	CELL BIOL	1932	2791
WEST, THOMAS SUMMERS	THEORETICAL CHEM	1927	3214
* WESTPHAL, OTTO HERMANN E	BIOCHEMISTRY	1913	3129
WHITAKER, J S	PHYSICS	1948	2874
✔ * WHITE, JAMES G	PATHOLOGY	1929	4002
WHITESIDES, GEORGE M	ORGANIC CHEM	1939	2625
* WIBERG, KENNETH BERLE	ORGANIC CHEM	1927	2769
WIDE, LEIF EDVIN	ENDOCRINOLOGY	1934	2857
WIESEL, TORSTEN N	PHYSIOLOGY	1924	3634
WIGZELL, HANS L R	IMMUNOLOGY	1938	7243
✔ * WILKINSON, GEOFFERY	ORGANOMET CHEM	1921	5444
✔ WILLIAMS, DUDLEY HOWARD	ORGANIC CHEM	1937	5591
WILLIAMS, R TECWYN	PHARMACOLOGY	1909-79	2790
✔ WILLIAMS, RALPH C	IMMUNOLOGY	1928	4037
WILLIAMS, ROBERT HARDIN	ENDOCRINOLOGY	1909-79	3289
WILLIAMS, ROBERT JOSEPH P	INORGANIC CHEM	1926	2948
✔ WILLIAMS, ROGER	GASTROENTEROL	1933	5234
WILLIAMSON, JOHN RICHARD	BIOCHEMISTRY	1933	2958
* WILSON, DAVID F	BIOCHEMISTRY	1938	2713
WILSON, JEAN DONALD	ENDOCRINOLOGY	1932	3398
* WILSON, KENNETH GEDDES	PHYSICS	1936	3067
WINEFORDNER, JAMES D	PHYSICS	1931	2811
WINSTEIN, SAUL	PHYSICAL CHEM	1912-69	3146
* WITKOP, BERNHARD	ORGANIC CHEM	1917	3921
WITTMANN, HEINZ GUENTER	MOLEC BIOL	1927	2776
WOLFF, JAN	ENDOCRINOLOGY	1925	2564
WOLFF, SHELDON M	IMMUNOLOGY	1930	2981
WOODWARD, ROBERT BURNS	ORGANIC CHEM	1917-79	3644
WURTMAN, RICHARD JAY	ENDOCRINOLOGY	1936	6330
WYMAN, JEFFRIES	MOLEC BIOL	1901	4133
* YAGI, HARUHIKO	ORGANIC CHEM	1939	2841
YALOW, ROSALYN SUSSMAN	ENDOCRINOLOGY	1921	4500
YANOFSKY, CHARLES	MOLEC BIOL	1925	4654
✔ * YEN, SAMUEL SHOW-CHIH	ENDOCRINOLOGY	1927	4108
YOUNG, ROBERT C	ONCOLOGY	1940	2503
YUNIS, EDMOND J	IMMUNOLOGY	1929	3511
* ZBAR, BERTON	ONCOLOGY	1938	3131
ZECH, LORE	GENETICS	1923	3393
ZIFF, MORRIS	IMMUNOLOGY	1913	2742
ZIMMERMAN, HOWARD ELLIOT	ORGANIC CHEM	1926	3226
ZINDER, NORTON DAVID	MOLEC BIOL	1928	2528
* ZUMINO, BRUNO	PHYSICS	1923	2500

Keep in mind, however, that we have eliminated from this study not only all citations to work published before 1965, but also citations to any articles not included in our source files. Books and book chapters were not added to the source file until 1977 and they have been excluded from the study. Citations to books are therefore also excluded. Since we cover all of the most important journals of science it is not a great limitation. But there is always a chance that some highly cited individual may be adversely affected by these selection criteria.

Of course, many scientists who published their most-cited papers before the starting date of this study, 1965, do not appear on this list. So there is a chronological bias in this study favoring those

who have published mainly during this period. As we change the chronological scope of our studies the list will change. In fact, if you compare the 300 most-cited authors on this list to those in the earlier study,[2] you would find that only one third of them are new names which did not appear on the 1961-1976 list. The new names are indicated by a check mark in Table 1. As a rough estimate, about 7.5 percent of the names will change as the base year is shifted annually.

I would like to mention a few of the mechanics involved in preparing these lists to show what care is taken to avoid errors of one kind or another. Once we had matched the citations with the source entries, the computer was programmed to generate a ranked list of authors' "names" (surname and up to three initials), a bibliography of papers associated with those names, and the number of citations each of those articles received. Actually, about 85 percent of the names could be used immediately but, unfortunately, about 15 percent represented homographs. Many journals do not provide the authors' first names in by-lines. And practically all journals only include initials for first names in reference citations. So we could not easily include first names in the *Citation Index* even if we wished to use the extra space.

When you look up a name like R.A. Fisher in *SCI*, the boldface entry is really a heading for the homograph which includes several people with the same last name and initials. It is never a problem to locate a particular paper, and ordinarily it is not a problem to differentiate the papers of the geneticist from the physicist. But in this study we religiously checked out each homograph to determine which papers belonged to each of the two or more persons involved.

We went about making this determination in a number of ways. One of the methods we used involved checking ISI's *Current Bibliographic Directory of the Arts & Sciences*® for the authors involved. Although we could confidently eliminate some of the addresses by comparing journal titles with department names, we sent letters to the authors at the remaining addresses. The letter asked them to fill out a questionnaire and provide a complete list of their publications. A large percentage of authors responded to this initial contact. For those who did not, or for those for whom we had obsolete addresses, we sent out second letters or attempted to contact them by telephone. In this way we were able to establish complete first and middle name information and discover which articles belonged to which authors.

As a result of these efforts, we eliminated many names and resolved the homograph problem. Thus, we counted only the number of citations and papers properly attributable to most authors. However, some authors may find that they are credited with a few extra papers or citations. In these cases, the few papers and citations provided insignificant "noise."

The average number of citations for all authors listed here was 3,811—over 272 citations per year. As it turns out, the minimum threshold for inclusion in this study was 2,436 citations—an average of about 174 citations per year. The average *cited* author is cited less than one tenth as often.

The average author in this study published 121 papers; on 32 of these his or her name appeared as first author and on 89 as one of the subsequent authors. The average author received 1,178 citations to papers on which he or she appeared as first author and 2,633 as coauthor. This clearly demonstrates the importance of all-author data for the most-cited scientists.

The list is provided in alphabetical, rather than ranked, order. For each author we have identified the field. To avoid further delay in publishing the list

we decided to provide this initial look now. In future parts of this study we will discuss groups of authors by disciplines. A cautionary note is needed here. Citation practices vary among disciplines so the reader should be careful in comparing raw citation counts for authors in one field with counts for authors in another. More detailed information about each author will be given in the latter parts of this study.

You will notice that for the first time in one of these studies we are giving the complete first and middle names of authors to better identify them. Based on purely feminine given names, it seems that at least 24 women appear on this list. We are not sure of the exact number because we did not ask the authors to state their gender on the questionnaire. In the future I plan an essay about women in science. The women identified in this study will be a good starting point.

We have also listed the date of birth for each author and, where applicable, date of death. The oldest author on this list is F.A. Lipmann, born in 1899, and the youngest is J.S. Whitaker, born in 1948. The average age of the authors on the list is 53. Table 2 shows the number of authors by decade of birth. Now it is clear that it would have been of interest to use the age at which their first paper was published, but we did not ask for this information.

Table 2: Number of authors by decade of birth.

Decade	Number of authors
1899	1
1900-1909	25
1910-1919	122
1920-1929	390
1930-1939	381
1940-1948	80

(One birth date was unavailable.)

The questionnaires sent to the authors asked them to name their own field or discipline. The authors are thus self-categorized. Thirty-eight fields are represented on the list. Table 3 lists the number of authors in each field. Immunology is the largest group.

An asterisk next to an author's name indicates that some of our information about that author may be incomplete. Such authors may never have sent us a bibliography or didn't fill out the questionnaire completely so we were unable to verify a piece of information. The information presented is accurate to the best of our knowledge. But errors may occur in such large studies.

With little effort, readers can scan the list to learn who is the most-cited author. In the vast majority of cases appearance on this list is an *indicator* that the person involved is *of Nobel class.*[4] Harriet Zuckerman, in her book *Scien-*

Table 3: Number of authors per field.

Field	Number of authors
Aeronomy	2
Astronomy	5
Astrophysics	7
Biochemistry	84
Biophysics	26
Cardiology	33
Cell Biology	57
Chemical Physics	2
Endocrinology	74
Enzymology	6
Gastroenterology	10
Genetics	21
Geophysics	2
Hematology	21
Histology	8
Immunology	128
Inorganic Chemistry	27
Microbiology	18
Molecular Biology	67
Nephrology	1
Neurobiology	2
Neuroendocrinology	1
Neurology	13
Neuropharmacology	9
Nuclear Medicine	1
Oncology	48
Organic Chemistry	51
Organometallic Chemistry	10
Pathology	23
Pharmacology	59
Physical Chemistry	24
Physics	77
Physiology	36
Plant Sciences	6
Psychiatry	4
Surgery	1
Theoretical Chemistry	7
Virology	29

tific Elite, likens this group to the "immortals," who, though equal in stature, are not included in the French Academy's limited membership of 40. She refers to these individuals "...who are peers of prizewinners in every sense except that of having the award" as occupants of the "forty-first chair."[5] (p. 42) Such people can be identified as *of Nobel class*. In fact, 41 Nobelists do appear on the list. However, one would have to examine the data for each individual on the list, in combination with other factors, to determine whether appearance on this list is primarily due to productivity, citation impact, or both. One cannot conclude that the most-cited or the most published author is necessarily the most important or the one who has made the greatest contribution to science.

Any list is, of course, only as good as the system that helps create it. Many of you are well aware of quirks in authorship attribution that permit some scientist-administrators to put their names on hundreds of papers as coauthors. Some of these scientist-administrators will show up on the accompanying list. This follows the old European tradition and quite often it has been followed at certain American institutions. The list may also include certain academicians who have not otherwise achieved great distinction but have coauthored dozens of papers with graduate students. We should not be quick to criticize such authors since there is no agreed-upon, published set of rules for establishing authorship. In some instances the other authors may have been only too happy to have the prestigious name included. It often helps the young research worker to be joined by a famous scientist as coauthor. There is as yet no agreed-upon method for assigning credit to each coauthor, although Derek Price has recently suggested a method to fairly attribute citations on multi-authored papers.[6] When we do the institutional study of these authors, this particular problem will be eliminated since citations to each paper can be credited to the department involved.

We realized long ago that a few people may appear on such lists because they had written one super-cited paper. When I discussed this with John deCani, department of statistics, University of Pennsylvania, he suggested that we might "censor" the data by excluding citations to the most-cited paper for each of the 1,000 authors.[7]

We did so and found that 90 percent of the time the most-cited paper accounted for fewer than 22 percent of the citations. In other words, the vast majority of the authors on this list would still remain among the most-cited if their most-cited paper were removed. The average number of citations to each author's most-cited item was 453. A study now under way will tell us how many papers in this time period have been cited this many times. Nevertheless, there are some instances where one or two papers account for most citations. The fact is that scientists *of Nobel class* not only publish one or more superstar papers, they also publish more often and their papers achieve higher impact. We observed this phenomenon over 15 years ago in a study of Nobel prizewinners.[8] (p. 63-4)

The world of science is very large. Over one million scientists publish from time to time. Of these, however, a small percentage publish a large percentage of all papers. That is one kind of productivity measure. Of those, however, there is an even smaller number who have a significant impact, which is largely reflected in citations. Since it is generally agreed that there is no significance to a particular citation count, one may usefully think in terms of percentiles—much as we do with IQs or aptitude tests. It would be absurd to choose one doctoral candidate over another because an individual had one point higher on an aptitude test. It

would be equally absurd to judge anyone on the difference of a few papers or citations. Indeed, it is absurd to use citations, publications, or any other *single* factor alone in evaluations. However, to narrow down one million names to 10,000 or less and then to categorize these names by specialties does provide a useful *beginning* in identifying, in an objective, non-obtrusive manner, those who are making the greatest impact.

Future parts of this series of essays will present a discussion of the 1,000 authors by discipline, provide detailed citation data and publication counts for each author, identify academy memberships and other forms of recognition, and examine the institutions where highly cited research is being conducted.

It is obvious to me that we must extend these initial studies in the future to include at least another 1,000 or 2,000 scientists. I say this if only because the memberships of the world's academies of science exceed this number, and the number of important scientists exceeds that number. But in order to do this in a far more efficient and systematic manner, ISI is developing a statistical data base derived from *SCI* and *Social Sciences Citation Index*® (*SSCI*®) that will facilitate large-scale studies for a variety of scientometric purposes. As we make progress with this system, I'll be reporting the outcome here and in the professional journals. And as the size of the study population increases, we shall identify more people in the smaller or less published fields.

We'd like to thank all those who cooperated with us during this study. In spite of their own publishing deadlines, grant application complications, and other research demands, hundreds of scientists took the time to provide us with information, even though some of these scientists were not included in the study.

* * * * *

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