The Convergence of Bioinformatics and Medical Informatics : Bibliometric analysis of health informatics research, 1991-2005

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Objective

- The convergence of biomedical informatics will provide a much broader view of the composition of health information soon became the mainstream in these domains.
- Search and analysis the publication of biomedical informatics.

Method

- Database:
  Web of Science from THOMSON ISI
- Document based on:
  - Science Citation Index (SCI)
  - Published from 1991 to 2005
- Keyword:
  ‘bioinformatics’, ‘medical informatics’ and ‘biomedical informatics
- Bibliometrics analysis

Results

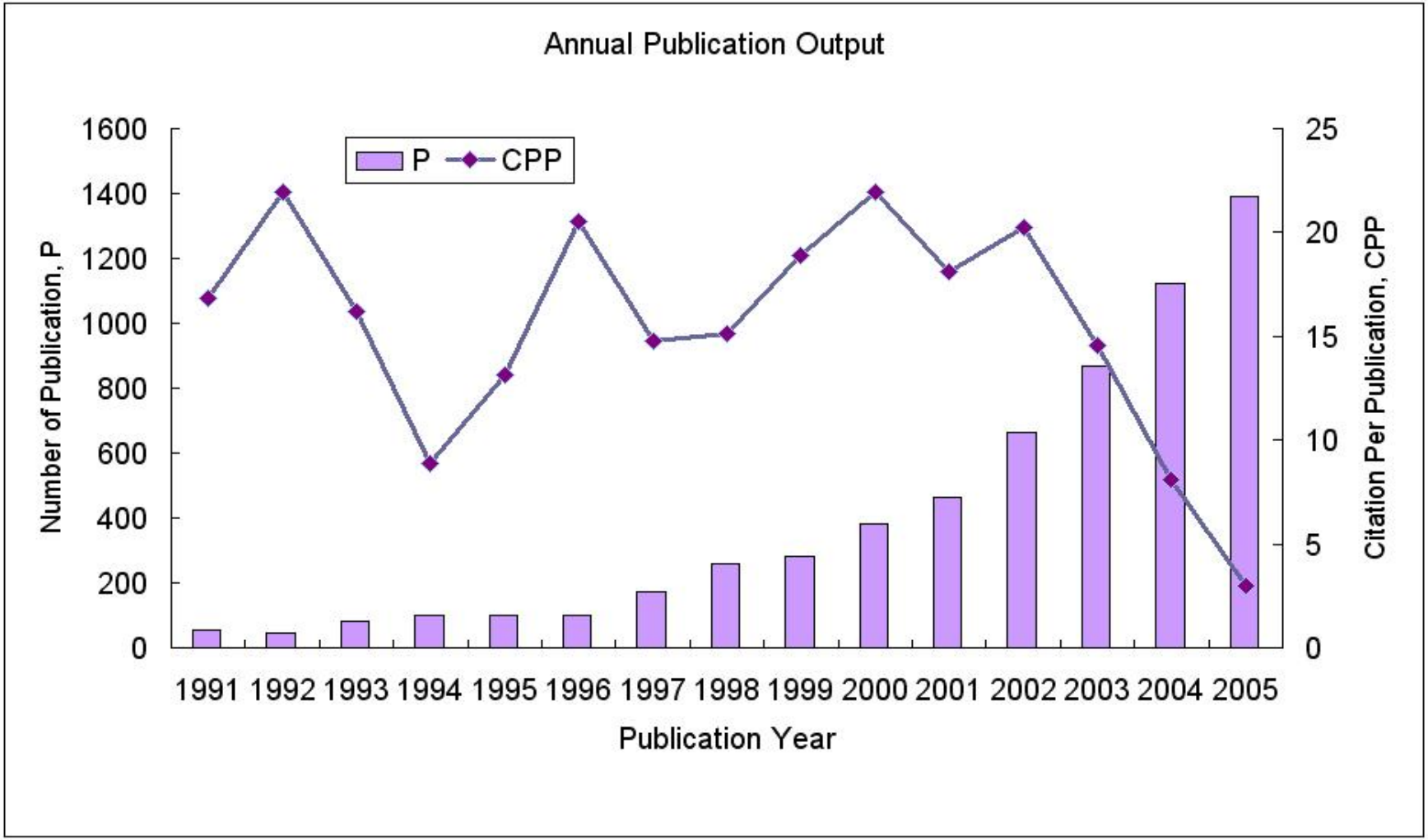
- Major characteristics of the research include bibliometric analysis of publication year, page count, number of author, and number of reference
- Percentage by language
- Bibliometrics analysis by document Type
- Ten most used author keywords
- Publication activity of top ten countries
- Total publication papers are about 7,830.
- Total citations are about 93,709
- The publications were published in 1,684 journals.

Major characteristics of the research

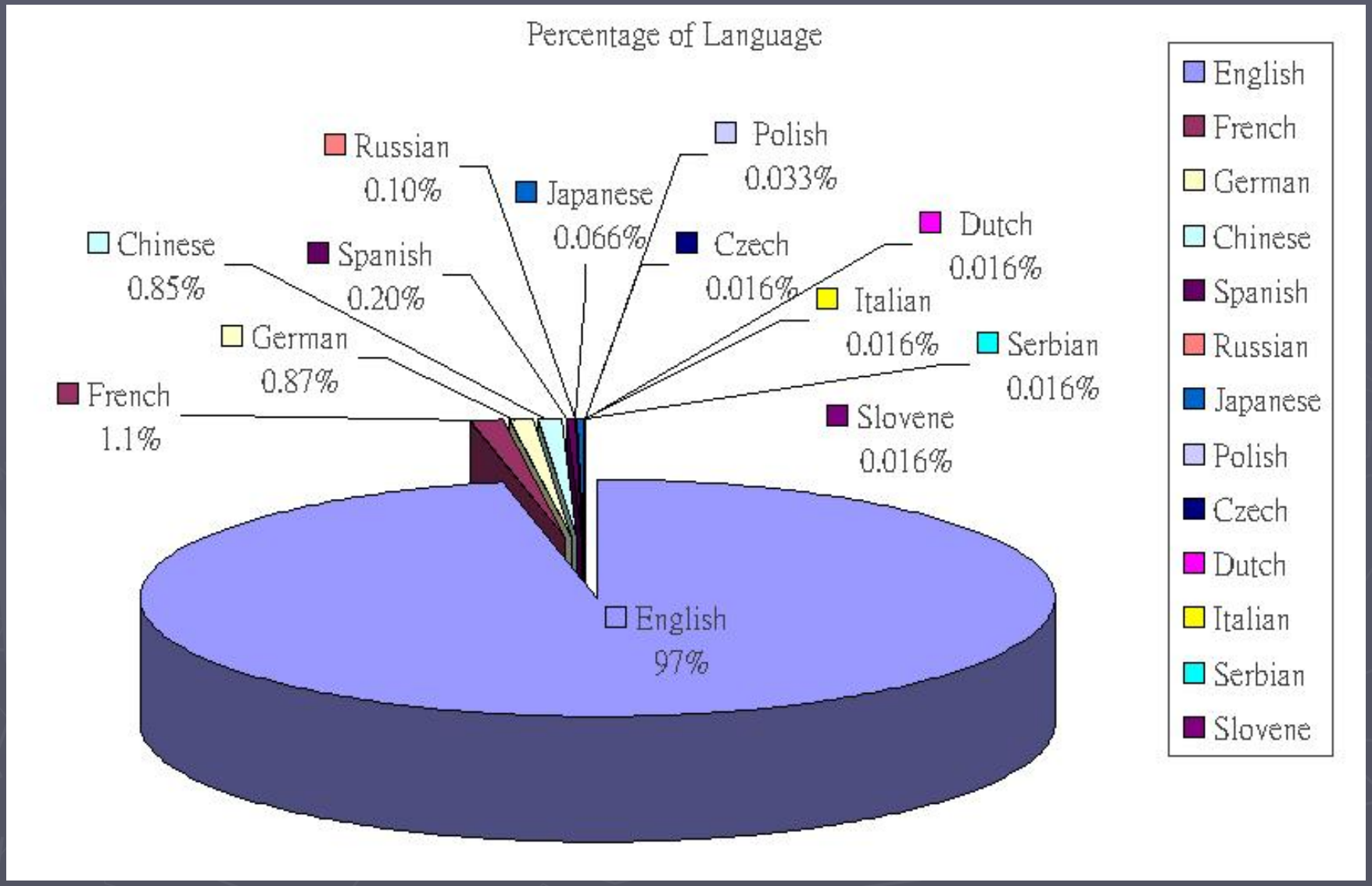
PY	P	PG	PG/P	AU	AU/P	NR	NR/P
1991	56	441	7.9	178	3.2	842	15
1992	47	376	8.0	156	3.3	934	20
1993	80	591	7.4	223	2.8	1128	14
1994	100	771	7.7	324	3.2	1324	13
1995	99	786	7.9	301	3.0	1848	19
1996	99	780	7.9	321	3.2	1966	20
1997	171	1316	7.7	570	3.3	3799	22
1998	259	2165	8.4	834	3.2	5539	21
1999	282	2218	7.9	938	3.3	6669	24
2000	384	3093	8.1	1540	4.0	9477	25
2001	463	3856	8.3	1932	4.2	12127	26
2002	662	5625	8.5	2829	4.3	19853	30
2003	866	7978	9.2	4384	5.1	27022	31
2004	1122	10539	9.4	5711	5.1	36452	32
2005	1392	13111	9.4	6732	4.8	46078	33

PY: Publication year, P: No. of articles, PG: Total pages, AU: No. of authors, NR: Cited reference count

Publication and Citation Per Publication by Publication Year



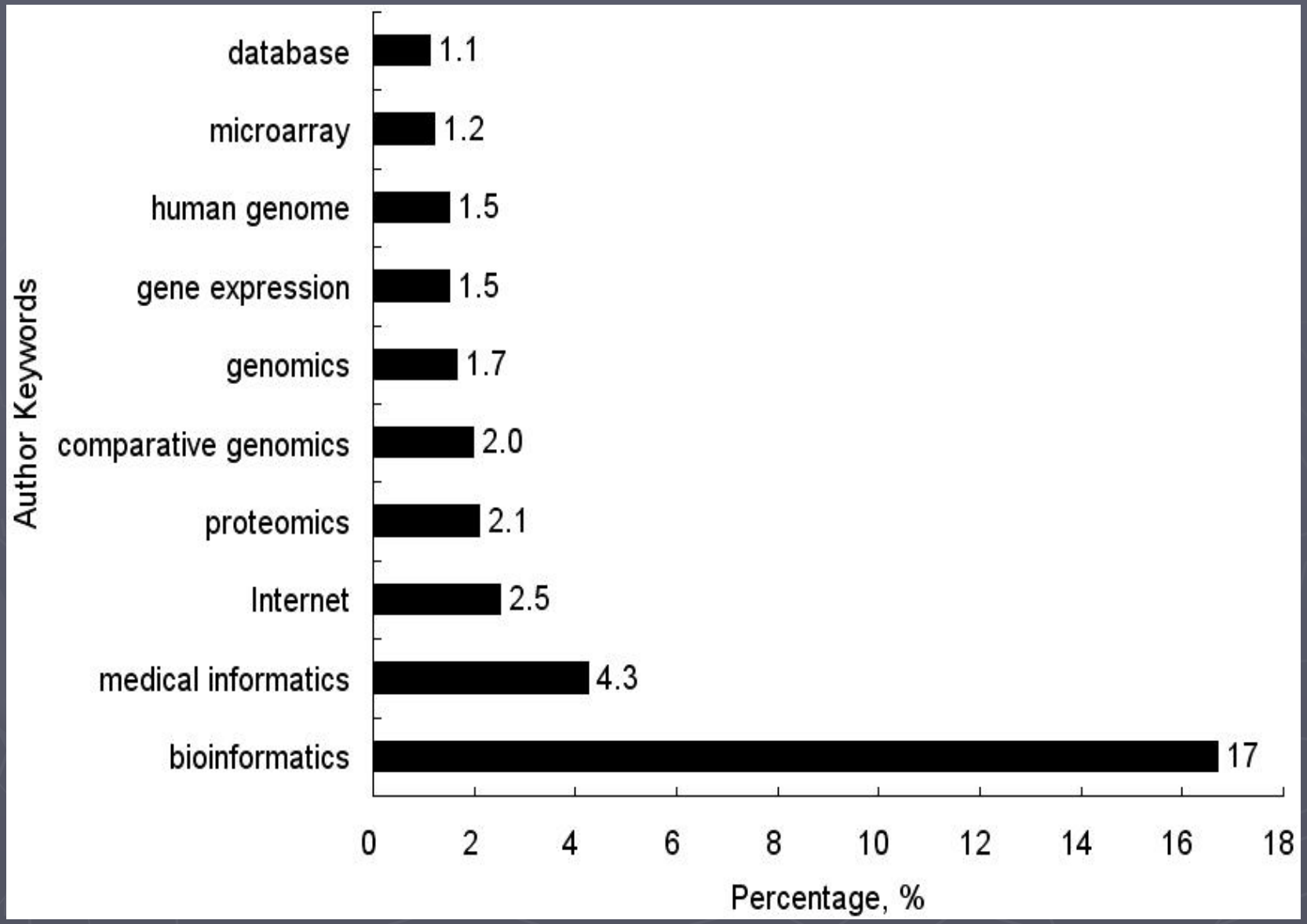
Percentage by Language



Document Type

DT	P	%	C	%	CPP
Article	6082	78	75299	80	12
Review	827	11	15355	16	19
Editorial Material	443	5.7	2551	2.7	5.8
Meeting Abstract	290	3.7	10	0.011	0.034
Letter	71	0.91	199	0.21	2.8
News Item	64	0.82	51	0.054	0.80
Correction	13	0.17	2	0.0021	0.15
Note	9	0.11	171	0.18	19
Book Review	8	0.10	0	0.0	0.0
Reprint	8	0.10	8	0.0085	1.0
Software Review	8	0.10	11	0.012	1.4
Biographical-Item	2	0.026	1	0.0011	0.50
Database Review	2	0.026	45	0.048	23
Discussion	2	0.026	6	0.0064	3.0
Correction, Addition	1	0.013	0	0	0.0

Ten most used author keywords



Publication activity of top ten countries

Country	SP	SP%	CP	CP%	TP	TP%
U.S.A.	2063	41	579	59	2642	43
U.K.	489	9.8	239	24	728	12
Germany	312	6.3	197	20	509	8.4
Japan	287	5.8	56	5.7	343	5.6
France	200	4.0	110	11	310	5.1
Canada	172	3.5	137	14	309	5.1
Peoples R China	200	4.0	69	7.0	269	4.4
Australia	105	2.1	79	8.1	184	3.0
Italy	111	2.2	69	7.0	180	3.0
Sweden	90	1.8	37	3.8	127	2.1

SP: Single country publications, CP: Collaborative publications

Conclusion (1/2)

- The results show an increasing number of articles since 1997 and author numbers, article pages and cited reference count numbers indicate a continuous growth of biomedical informatics community.
- The five most author used keywords were bioinformatics, medical informatics, internet, proteomics and comparative genomics.
- Fifteen document types were found in the total of 7830 documents. Seventy-eight percent of all documents are articles.

Conclusion (2/2)

- The production came from many countries, denoted the devotion to this research in different area around the world.
- A step farther….
  - Based on our concurrent leading status, Taiwan can devote more to this new field.
  - The keywords analysis provide us a hint for the future research.