



Fostering Regional Innovation and Development through Anchors and Networks: A Cross Regional Comparison in an Evolving International Context.

# Regional development, economic prosperity & cohesion: new avenues & policy changes

Paul Nightingale

SPRU, University of Sussex UK

[www.fridaproject.eu](http://www.fridaproject.eu)



Project funded under the Sixth Economic Science and Humanities (SSH) Theme of the Seventh Framework Programme.

Brussels, Nov 12, 2010

# Policy Implications

- Overview of policy context
- Brief overview of the Sussex work
  - From R&D to S&D
  - Heterogeneity of Anchor behaviour
- Policy Implications in the context of “2020 Strategy” and ECPG 2010

# Policy Context

- UK – post-crisis/election RDAs shut down
  - Poor value for money, ineffective
  - “Structure” based solutions subject to capture and poorly aligned with economic incentives
  - Local regional focus may have been appropriate in 1910, but 2010 requires a global focus.
  - Bio-pharmaceutical productivity crisis (clusters?)
- European Innovation Plan, 2020 Strategy, 2008 European Cluster Memorandum, Commission Communication on Clusters – taking stock – upgrading competitiveness

# Policy Context

- 3 areas of research to inform policy:
  - First, growth, gazelles & SMEs
    - very small percentage of firms drive job creation and economic growth.
  - Secondly, networks & firm interdependence
    - A gazelle may double its sales, but only because a customer doubled demand. Very dynamic.
  - Thirdly, research on regional geography
    - from ‘structural’ links to entrepreneurial functions on local to global spatial scales.

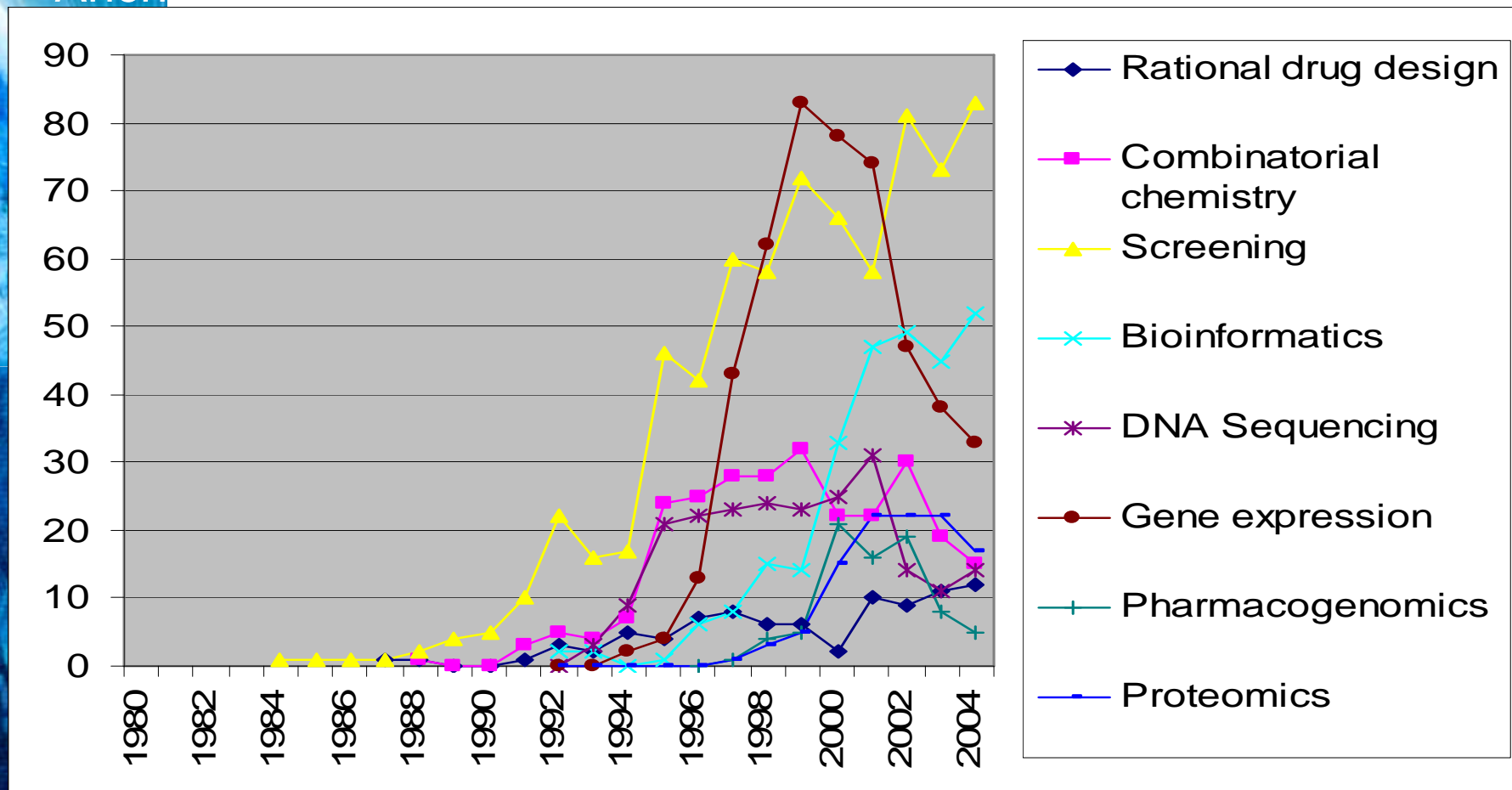


# Brief Overview Sussex Work

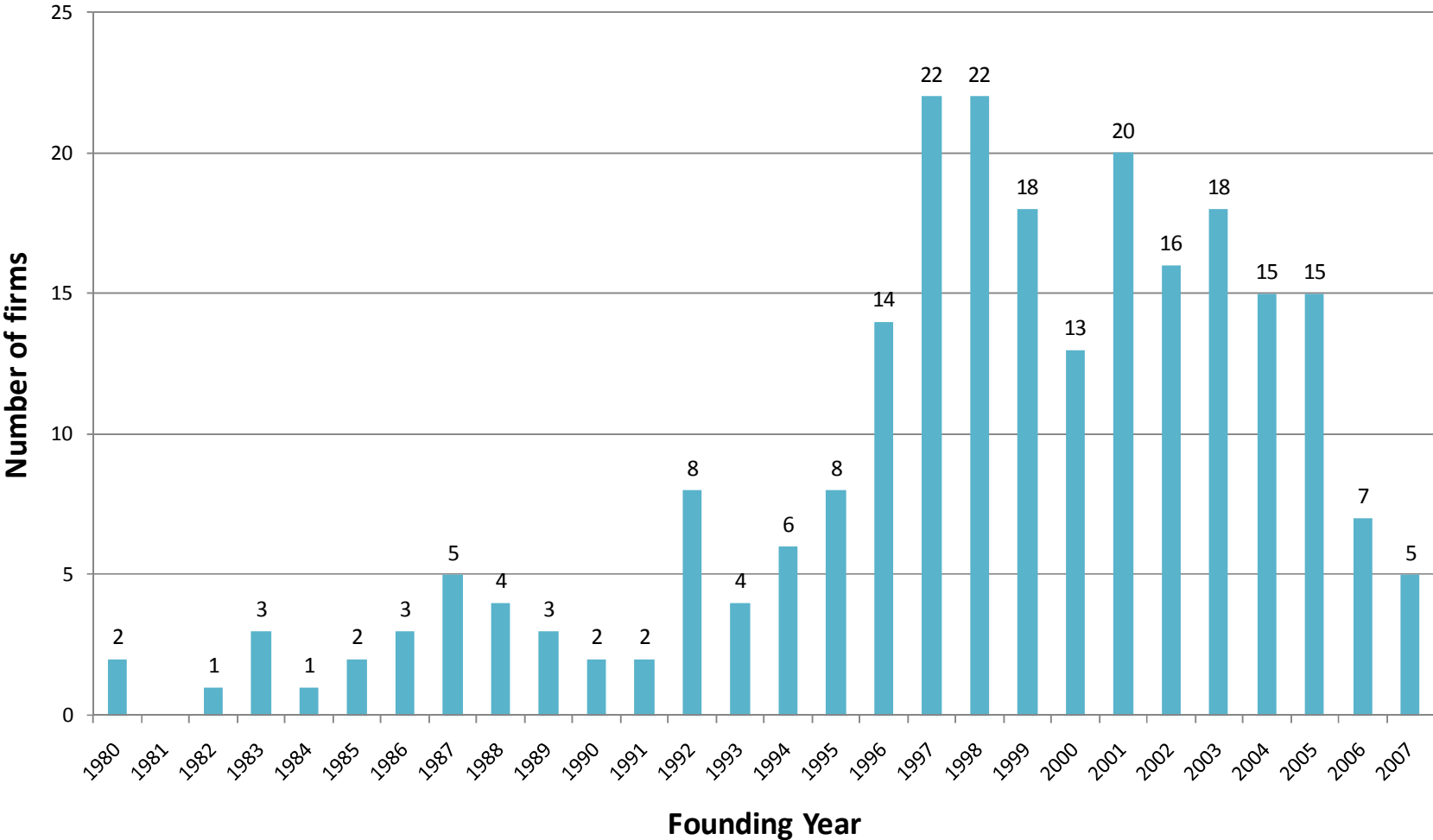
- B-metric + process + co-production
  - Interactions knowledge, management, markets, CVC, regulation
- Conclusion - Not a single process
  - Platforms, IPR-IPO, less science more failures
  - Second shift to S&D “search and develop”
- Global firms search globally for assets
  - Some markets more local (i.e. management)

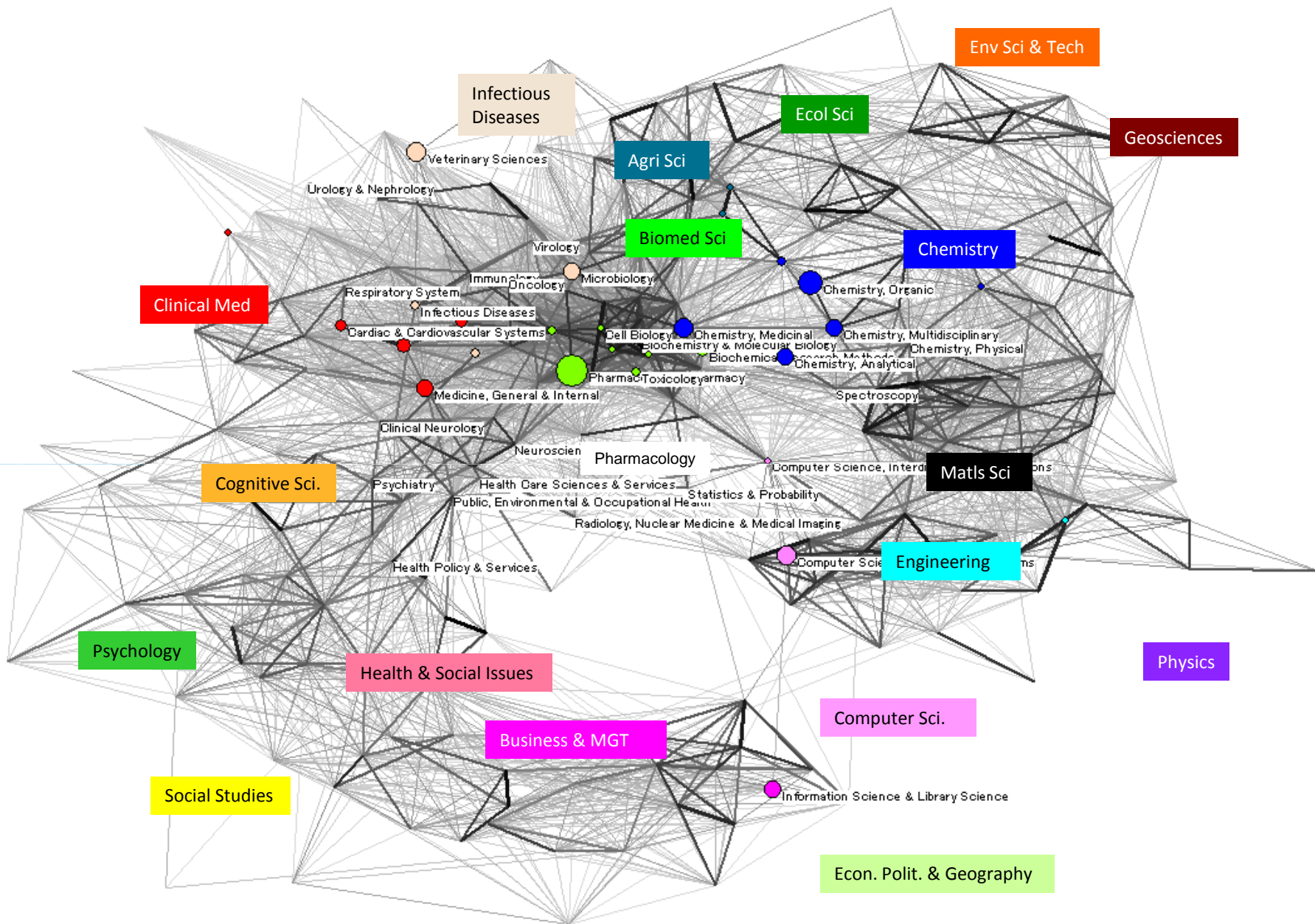
Subject	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Recombinant DNA					2	0	1	0	1	1	1	1	3	1	4	2	2	1	1	0	11	8	3	2	1
Sequencing DNA					1	0	3	1	1	5	4	10	7	12	9	15	13	25	20	21	14	41	12	13	15
Gene Cloning						1	3	1	3	4	5	15	18	18	16	15	17	18	14	11	16	25	9	9	5
Protein Sequencing							3	0	4	6	4	13	20	21	20	27	27	42	29	38	28	39	11	25	20
Protein Expression							1	0	0	2	0	0	1	3	3	2	2	3	6	10	6	10	2	11	9
Gene Expression									1	2	1	2	8	6	6	11	17	9	25	30	26	28	21	26	21
Sequence Homologies										1	2	5	1	4	2	0	4	5	5	7	6	0	7	4	
Transgenic Animals	x	x	x								1	2	0	1	1	2	1	5	5	8	5	7	4	2	2
DNA databases												6	3	5	5	5	6	8	7	12	6	7	5	3	1
Bioinformatics	x	x	x	x	x	x	x	x	x							1	0	2	3	4	4	11	12	10	9
Gene Function																	1	1	3	1	5	2	7	3	1
Genome Mapping																	1	0	1	1	2	4	2	2	1
Gene Knockout	x	x	x	x	x	x	x	x	x	x	x	x	x				1	0	1	2	1	2	1	1	0
Genotyping	x																	2	2	0	2	5	1	2	4
Population genetics																		1	1	1	1	5	0	5	0
Pharmacogenetics																		1	0	1	1	7	2	6	2
Microarray	x	x	x	x															1	0	1	7	4	7	7
Proteomics	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			1	2	9	6	6	6
SNP analysis	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x						1	4	2	4	2
RNA interference	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x					1	0

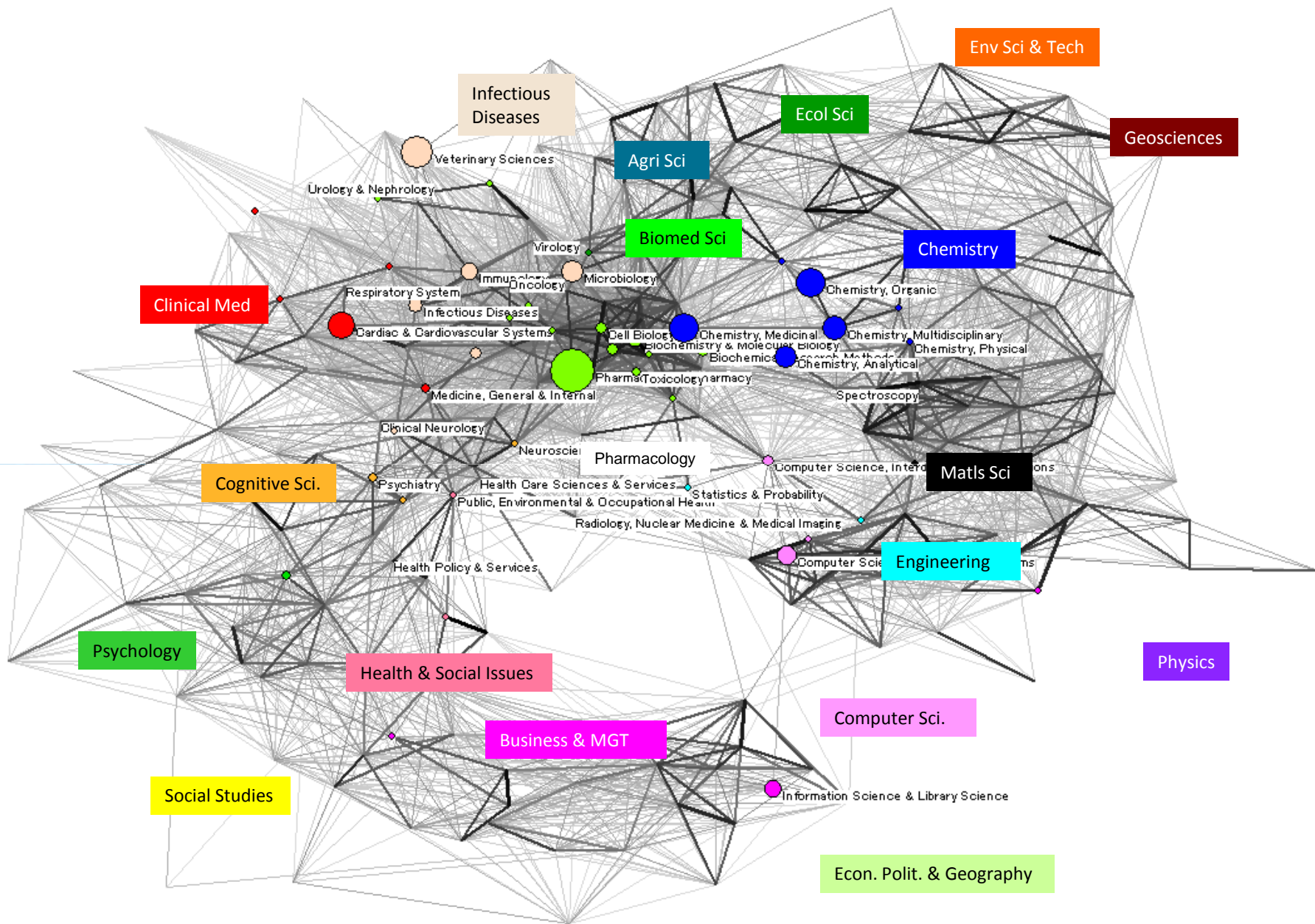
Fig. 1. The accumulation of research interests related to exploitation of genomics at GSK 1979–2003 (see Footnote 12).

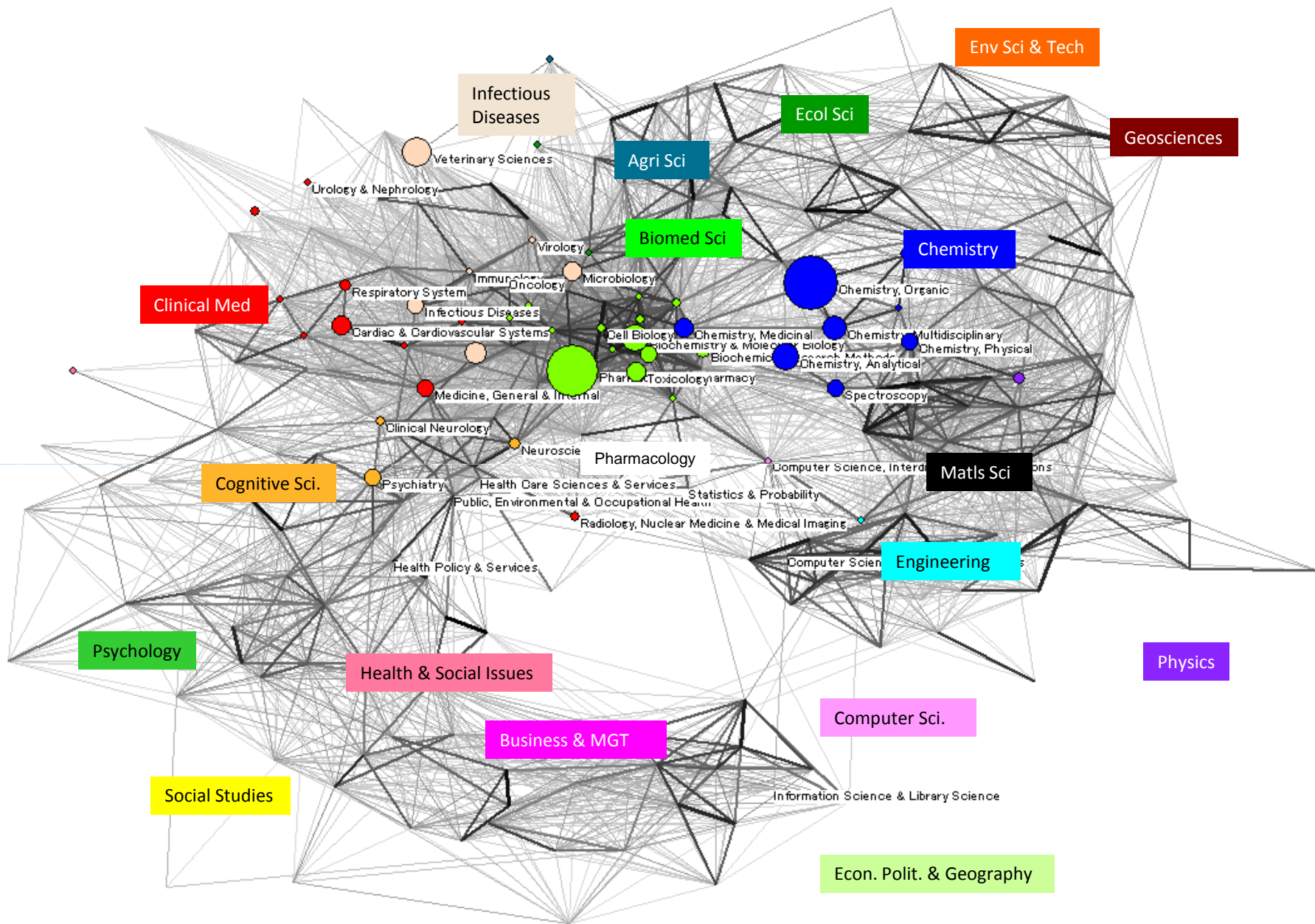


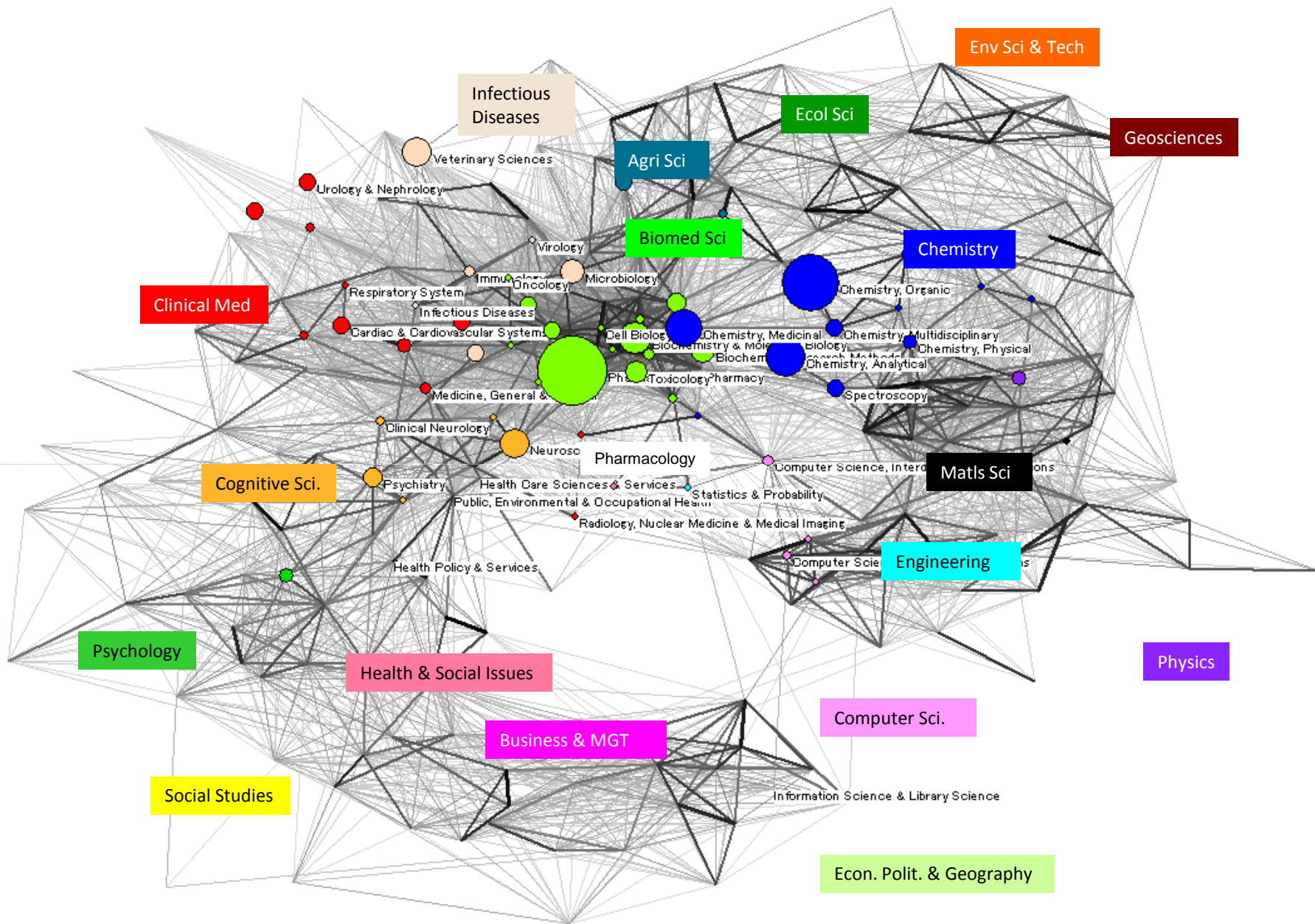
### Number of UK Therapeutics Firms Founded per Year

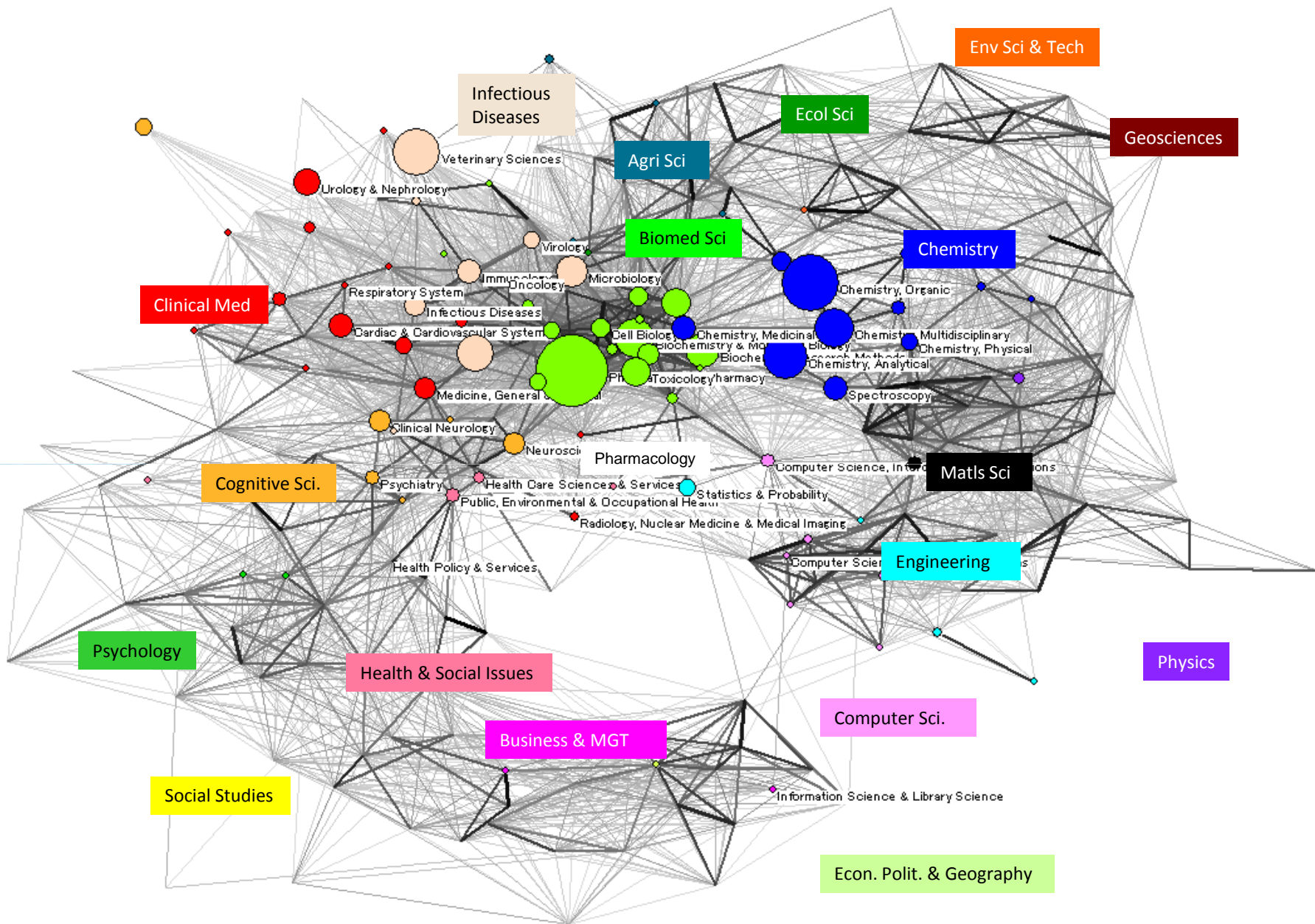


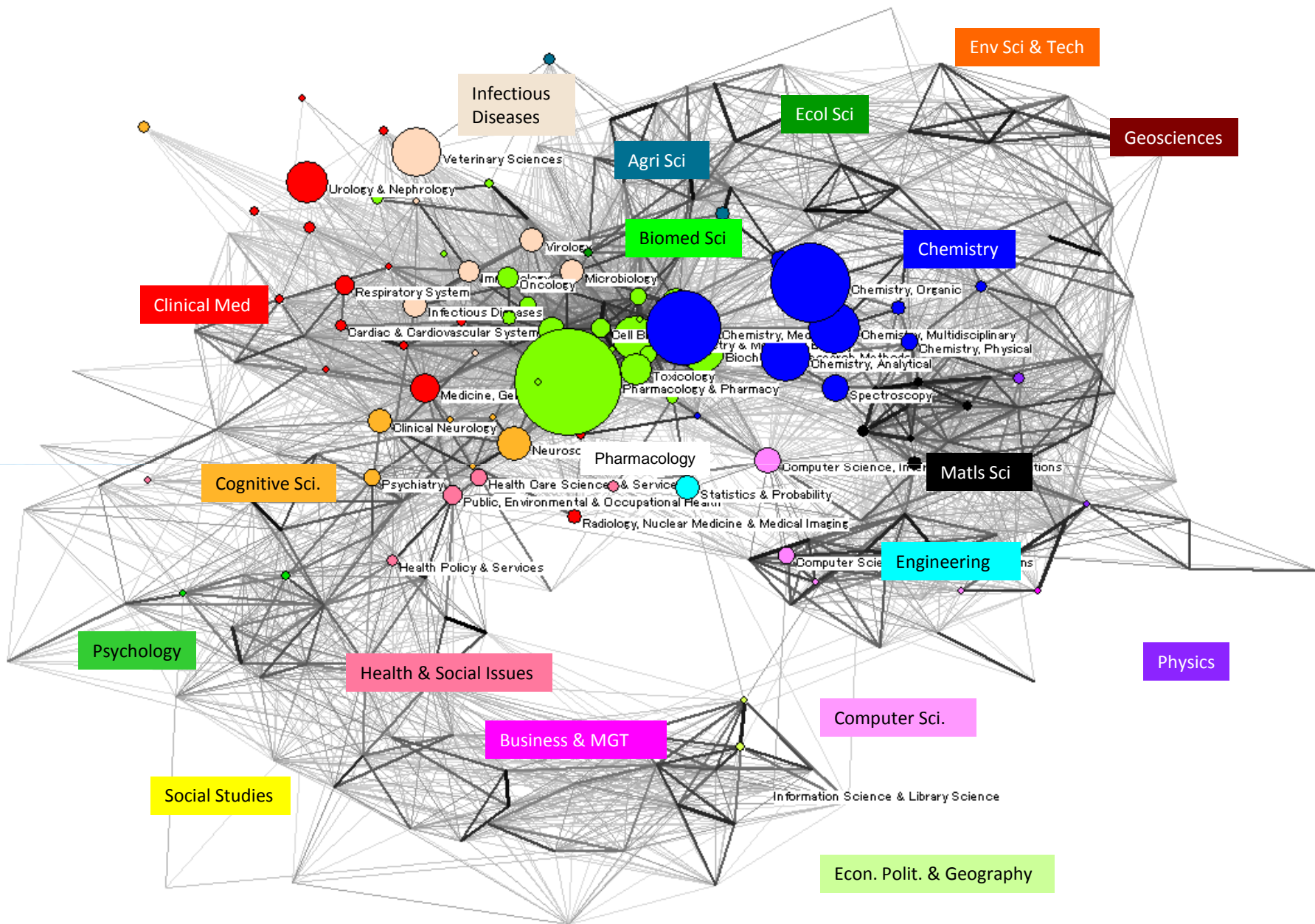


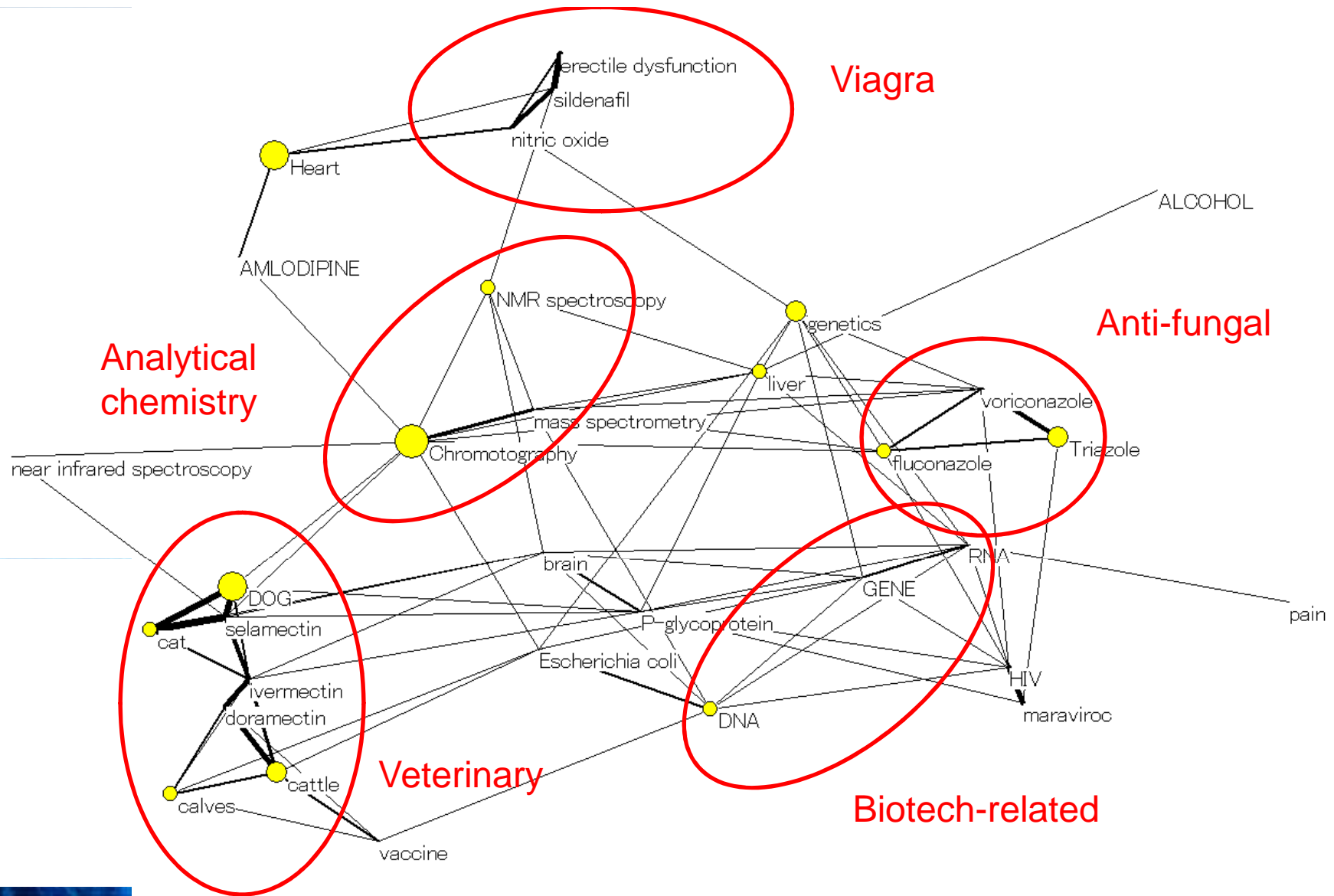












Topics Mapping  
 Similarities between selected highly occurring Keywords

## UK

UNIV MANCHESTER	75	2.51%
UNIV LEEDS	65	2.18%
UNIV CAMBRIDGE	61	2.04%
IMPERIAL COLL	61	2.04%
UNIV OXFORD	58	1.94%
UCL	54	1.81%
UNIV SHEFFIELD	52	1.74%
UN SOUTHAMPTON	51	1.71%
UNIV GLASGOW	50	1.68%
UNIV NOTTINGHAM	45	1.51%
UNIV BIRMINGHAM	41	1.37%
UNIV LIVERPOOL	40	1.34%

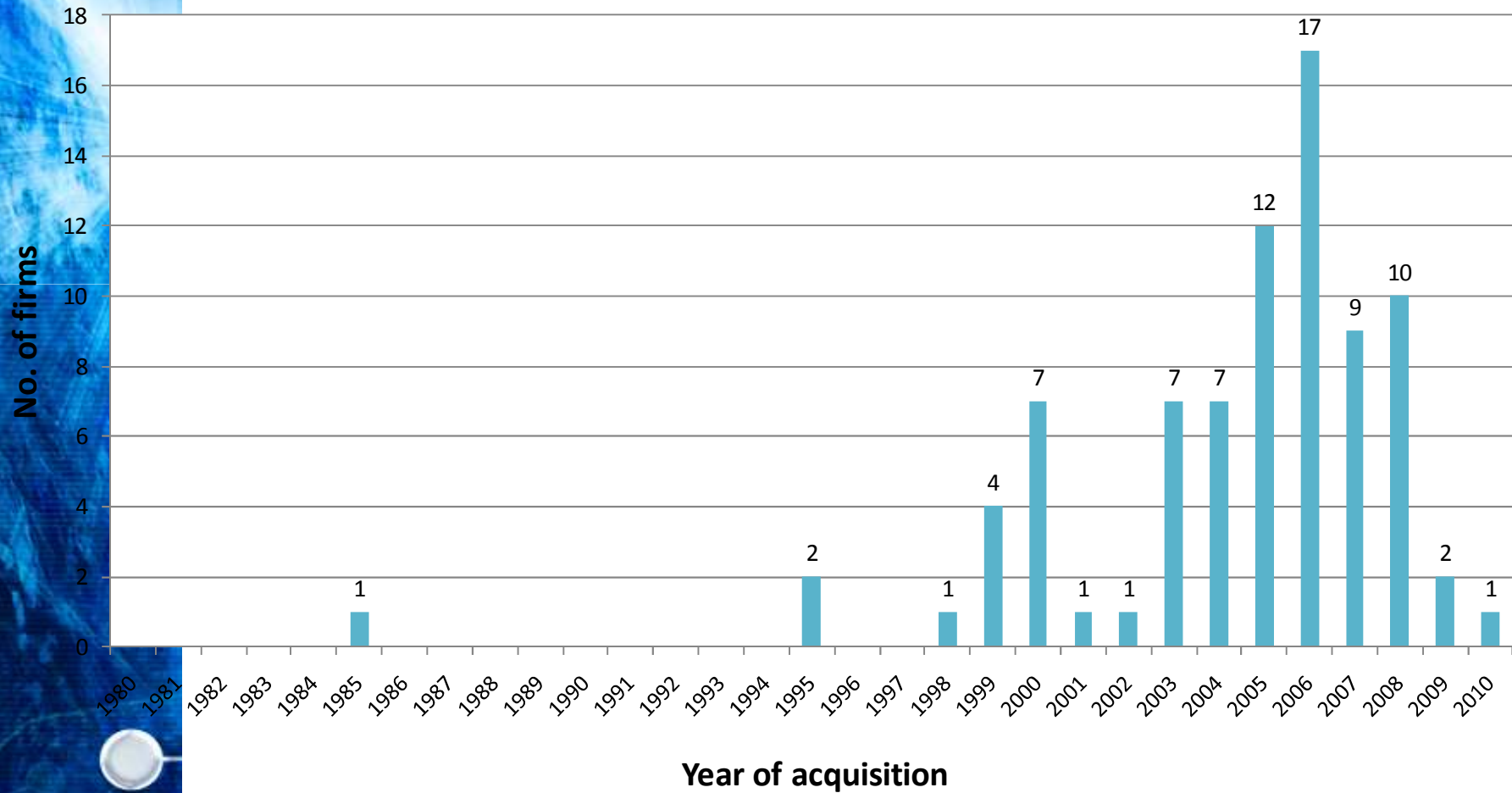
## EU

LEIDEN UNIV	21	0.70%
UNIV GHENT	16	0.54%
UPPSALA UNIV	13	0.44%
UNIV LUND HOSP	11	0.37%
FREE UNIV BERLIN	10	0.34%
HOP ERASME	10	0.34%
FREE UNIV BRUSSELS	9	0.30%
KAROLINSKA INST	9	0.30%
LEIDEN AMSTERDAM Cntr	8	0.27%
UNIV AMSTERDAM	8	0.27%
UNIV UTRECHT	8	0.27%

## US & CA

UNIV TEXAS	14	0.47%
UNIV WASHINGTON	12	0.40%
MASS GEN HOSP	10	0.34%
MCMASTER UNIV	10	0.34%
MAYO CLIN	10	0.34%
UNIV CALIF SAN DIEGO	9	0.30%
CASE WESTERN RESUNIV	8	0.27%
NIAID	8	0.27%
UNIV CALIF LOS ANGELES	8	0.27%
UNIV M&D NEW JERSEY	8	0.27%
CORNELL UNIV	7	0.23%
UNIV FLORIDA	7	0.23%
NEW ENGLAND RES INST	7	0.24%

## Number of UK Therapeutics Firms Acquired (by Year of Event)



# Policy Implications

- Not just gazelles
  - Have to look at network effects
  - “Cowling Paradox” – 97% easy to find
- Not just clusters
  - Increasing global focus, reflects superior S&T in US v relative weakness of research in EU
  - Think of research as demand not supply.
  - ECPG: competitive upgrading not compensation!
- Anchor firms play key entrepreneurial role in structuring upgrading and linking to global
  - Without entrepreneurial role, support subject to capture

# Policy Implications

- Very important to pay attention to process not just structure
  - Regional VC funds a ‘kiss of death’ to biotech
  - More ‘institutions’ i.e. uni-ind links waste effort
- Generalising from atypical single UK sector
  - Do not under-estimate firms reaction to policy
  - Implicit industrial policy produces global success
  - Behaviour strongly influenced by economic incentives – policy needs to work with them
- Provides **STRONG** support for 2020 focus on direction not just rate of innovation....



Thank you for your attention !  
Questions welcome

**Acknowledgements:** we acknowledge the financial support of the FP7 European project FRIDA (FP7-SSH-2007-1).