

Towards Regional Science Policy? The rationale from biosciences



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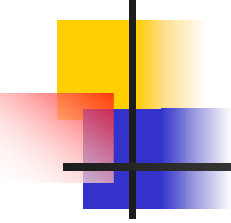
Key points in argument

- Rise of 'knowledge economies'
- R&D moves to specialist firms & university centres
- 'Discovery companies' (e.g. biotech) cluster, but not around 'big pharma'
- Regional *innovation* systems (cf. national *science* & [EU] supranational *technology* policy & funding)
- Is this changing as RISs develop around basic science 'Centres of Excellence'?



Clusters as Global Knowledge Transceivers

- Partly predicted by Mode 2 (transdisciplinarity)
- Heterarchic cognitive imperative
- New reflexivities: ethics v. markets
- A research/exploitation value chain, rooted (in biotech) in DBF clusters
- 'Is Glaxo better than a biotech firm or university researchers?' HOD Glaxo research
- But note Novartis and 'rational drug design'



Date	Institution	Name	Indication
1960	U. of Pennsylvania	Nowell / Hungerford	Blood Chromosome 22 'Philadelphia Chromosome'
1973	U. of Chicago	Rowley	C22 translocated to C9 discovery
1986-7	Whitehead Institute Cambridge MA	Baltimore	Bcr-Abl Protein: Tyrosine Kinase (Cell Regulator)
1992	Dana-Farber Cancer Institute, Boston	Druker	Bcr-Abl > CM leukaemia; mutant enzyme jams cell- signals discovery.
1993	Oregon Health Sciences University	Druker/ Ciba-Geigy	Reagent & inhibitor for Tyrosine Kinase activities
1993	Ciba-Geigy	Leyden/Matter	ST1571 inhibitor compound (Glivec) selected
1998-2000	Novartis	Druker	Clinical Trials & FDA approval
1998		Nowell/Rowley	Lasker Medical Research Award

Table 1: Institutional and Corporate History of Novartis CLM Treatment 'Glivec'

Source: Journal of the National Cancer Institute, January 5, 2000

http://www.nci.nih.gov/clinical_trials



The 800 Pound Gorilla

- End of Cold War, start of 'regional' wars
- \$ Priorities shift towards health research
- Mode 1 > Mode 2
- \$27 billion for NIH in 2003, plus extras
- PMIs (HHMI \$13bn endowment)
- Foundations (Wellcome \$21 bn)
- Spending (Wellcome @ £600m, more than all UK research councils)



Strategic Science Policies

- Centres of expertise
- Centres of excellence
- Concentration of Clinical Research facilities
- General Clinical Research Centres
- Co-location with basic research clusters
- A Research/Exploitation Value Chain



Regional Science Policy?

- Competitive bidding
- Centres of Excellence with Medical Schools, Clinical Research and DBFs highly competitive and scarce
- 'Economies of association' in enterprising regions
- Market-following – US
- Bottom-up – Scotland (Canada, now less)
- Top-down Finland (beware exuberance)



Conclusions

- In biosciences it looks like big pharma is on the back foot in R&D
- 'Megacentres' of heavily private/public basic research, clinical plus DBF clusters are becoming major economic nodes
- Regional governances see economic benefits
- Regional science policies emerge
- Implications for hitherto centralised national allocations and institutions?
- Transparency, devolution, ring-fencing?