

# Biotechnology clusters

## Montreal and Ottawa compared

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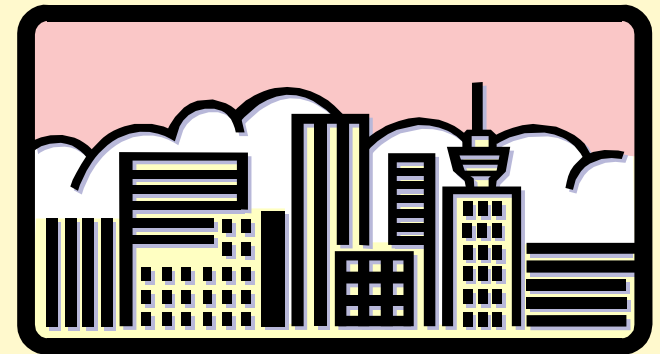
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**Biotech**

# Theories about biotechnology clusters

- Localised knowledge spillovers (D. Audretsch, M. Feldman...)
- Localised technology markets (L. Zucker, M. Darby...)
- Regional systems of innovation (Cooke & Morgan...)



# Canada's biotech clusters

Number of private biotech firms

Toronto	73
Montréal	72
Vancouver	59
Québec	22
Edmonton	18
Calgary	10
Ottawa	9

# Montreal Biotech Cluster

## Number of firms

<b>Human health</b>	<b>130</b>
<b>Human nutrition</b>	<b>26</b>
<b>Ag-Bio</b>	<b>12</b>
<b>Environment</b>	<b>7</b>
<b>Services</b>	<b>171</b>
<b>Other</b>	
<b>Government labs</b>	<b>1</b>
<b>Universities</b>	<b>4</b>

# Montreal SBFs

<b>Total number of employees</b>	<b>2300</b>
<b>4 largest</b>	<b>1094</b>
<b>All 73 other</b>	<b>1206</b>

# Montreal Human Health Cluster

## Number of firms

SBFs	79
Pharmaceutical	28
CROs	10
Other	13
H.H. Services	41

# Montreal SBFs: specialties

## Firms in human health

Biopharma	29
Genomics	16
Biomaterials	12
Biodiagnostics	8
Bioproducts	6
Bioprocesses	5
Other	3

# Montreal biotech invention

29 firms in Montreal have 234 locally invented patents  
Out of which

The four largest have 175 patents (75%)

The eight largest have 209 patents (89%)

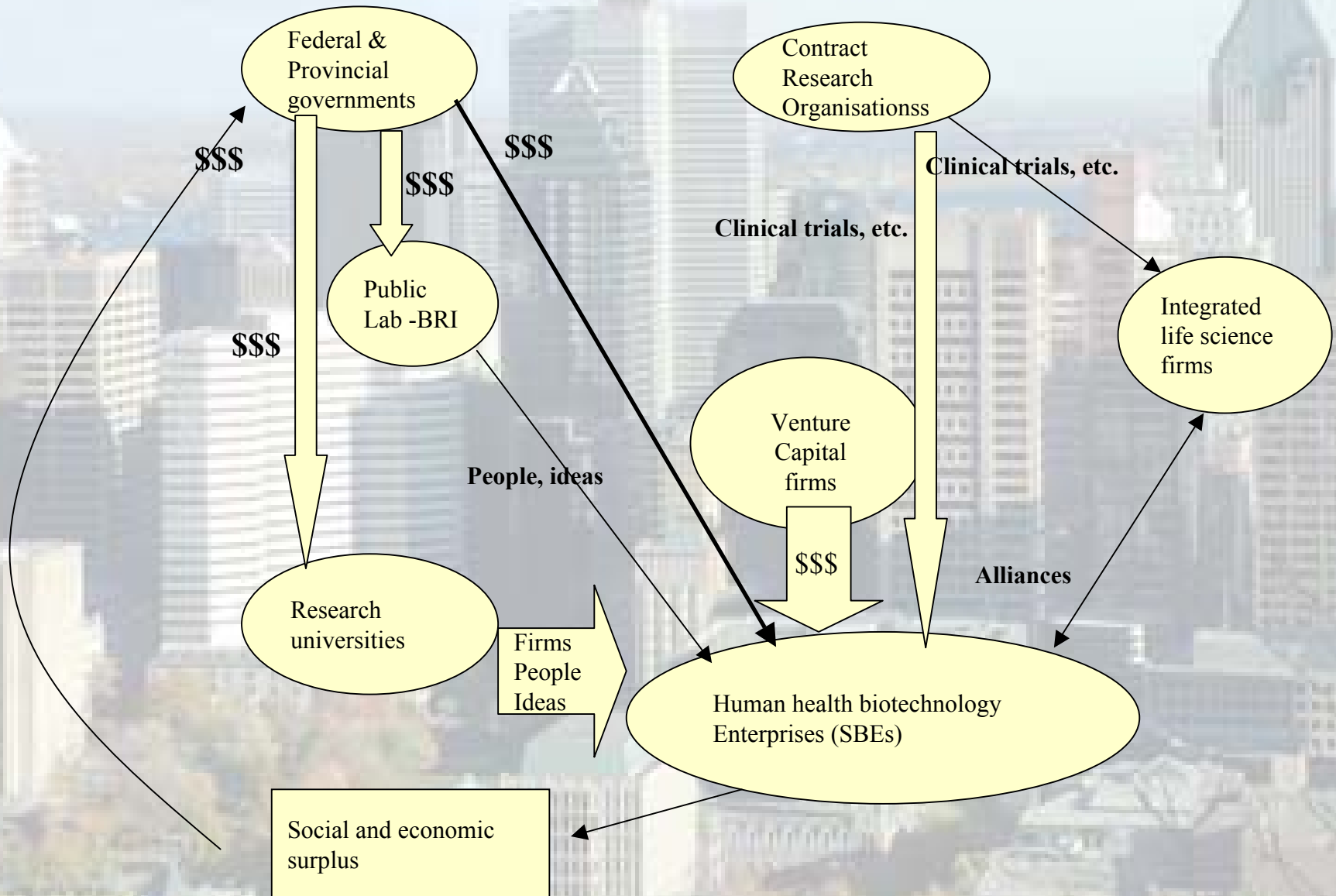
21 other have 25 patents

(In 1998 only 14 firms had 66 patents in all)

4 universities and 1 government labs with patents



# Montreal Human Health Biotechnology Cluster . Flows and dynamics



# Ottawa's emerging biotech cluster

<b>SBFs</b>	<b>30</b>
<b>Total employees</b>	<b>650</b>
<b>Government labs</b>	<b>6</b>
<b>University</b>	<b>1</b>
<b>Service firms</b>	<b>10</b>

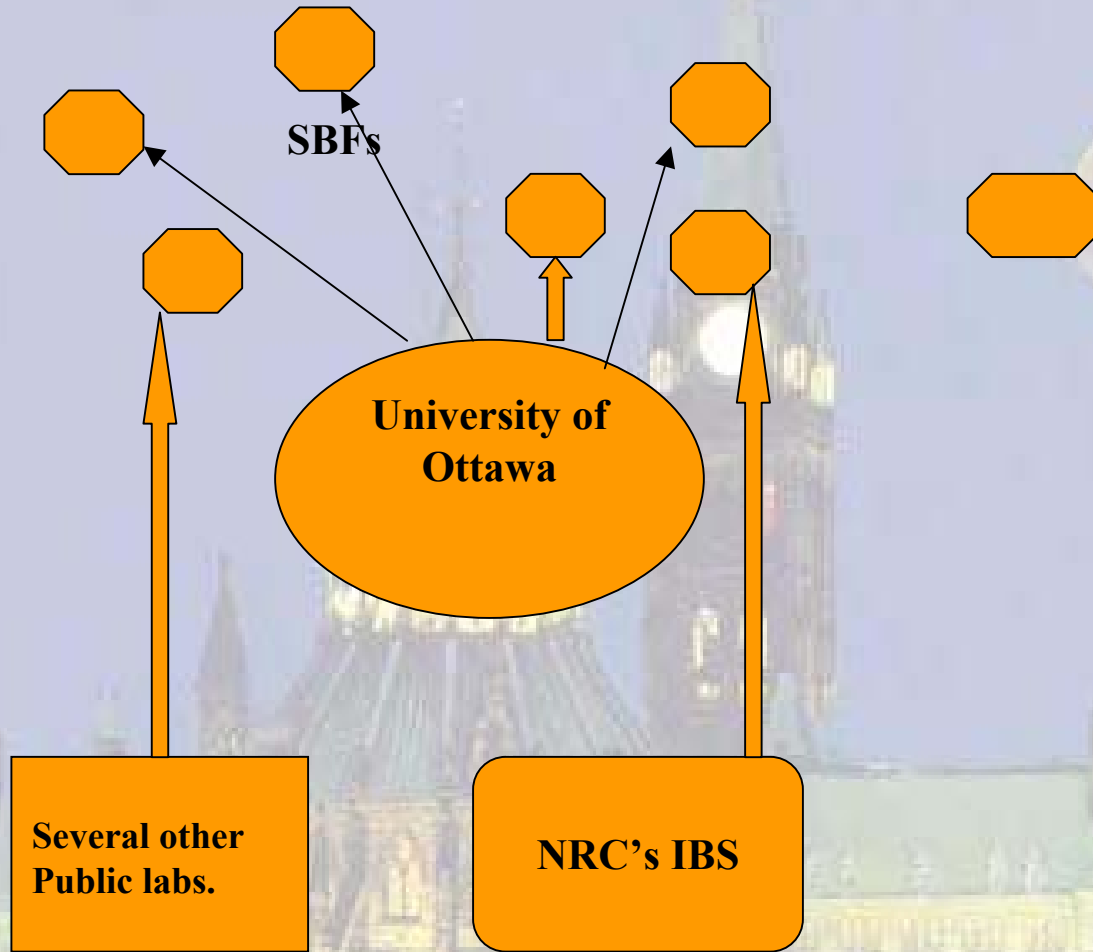
# Some characteristics of Ottawa's SBFs

Average age of firms	10 years
Median age of firms	6 years
Average size of firms	27 empl.
Median size of firms	12 empl.
Firms quoted in stock markets	2
Firms with locally invented patents	2
Ottawa U. biotech patents	11

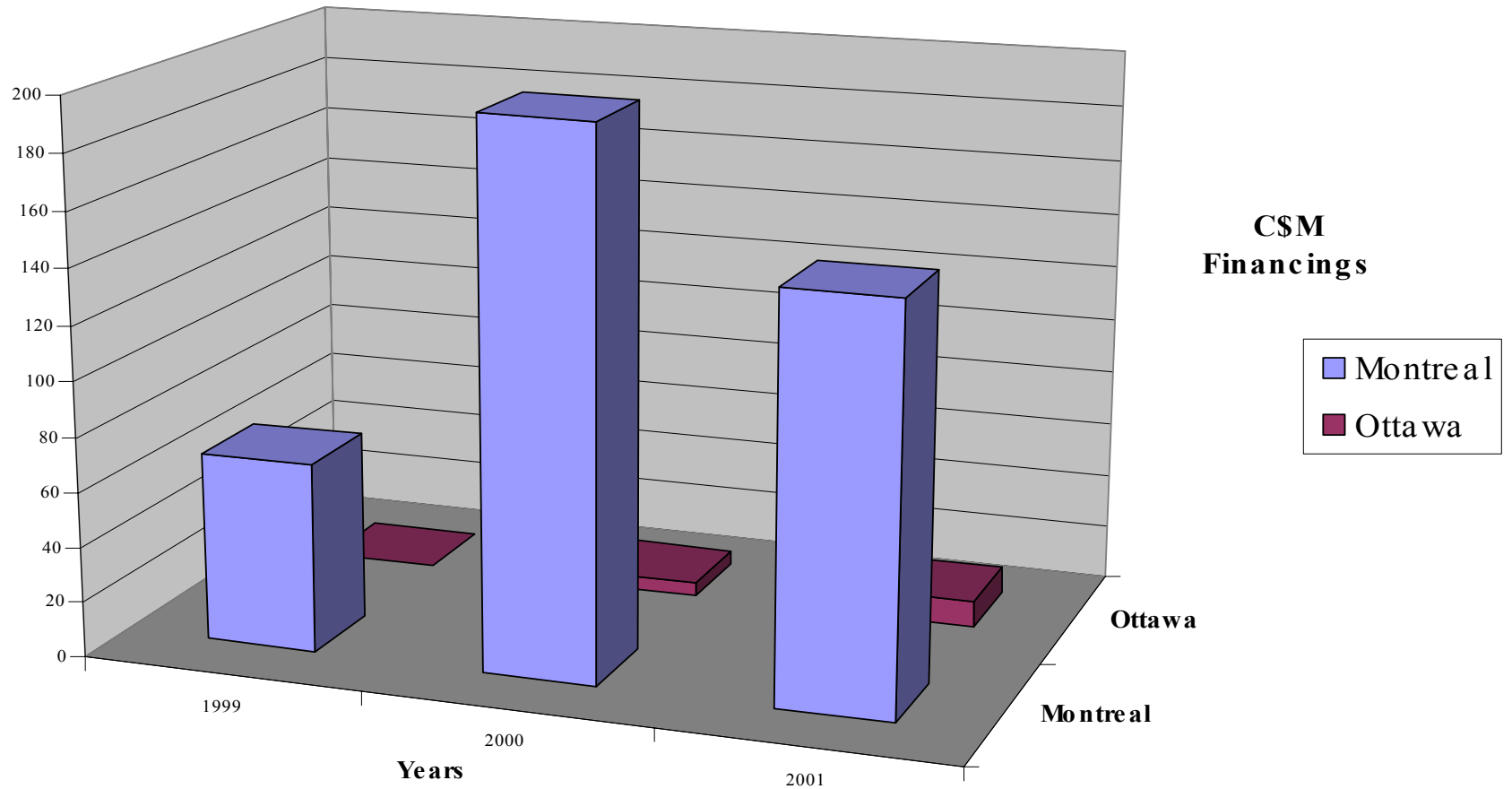
# Ottawa's emerging biotech cluster

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# Ottawa's emerging biotech cluster



# Montreal and Ottawa, venture capital biopharmaceutical financings, 1999 to 2001



# Conclusions

Montreal is a regional innovation system in biotechnology and a production cluster in pharmaceuticals. We need more research to decide how many LKSs and/or market knowledge Transactions there are.

Ottawa is not today an RSI either in biotechnology or Pharmaceuticals.

