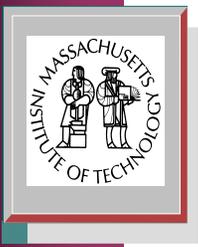


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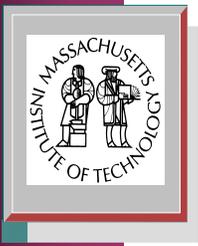
# **The Effects of Geographic Location on Communication Patterns Among Biotechnology Firms (Continued)**

May 15, 2007



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# **Communication as a Function of Distance Among Firms**



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# **Returning to Our Old Studies of Communication Among Engineers**



# Network for a Single Department Showing the Effect of Physical Location.

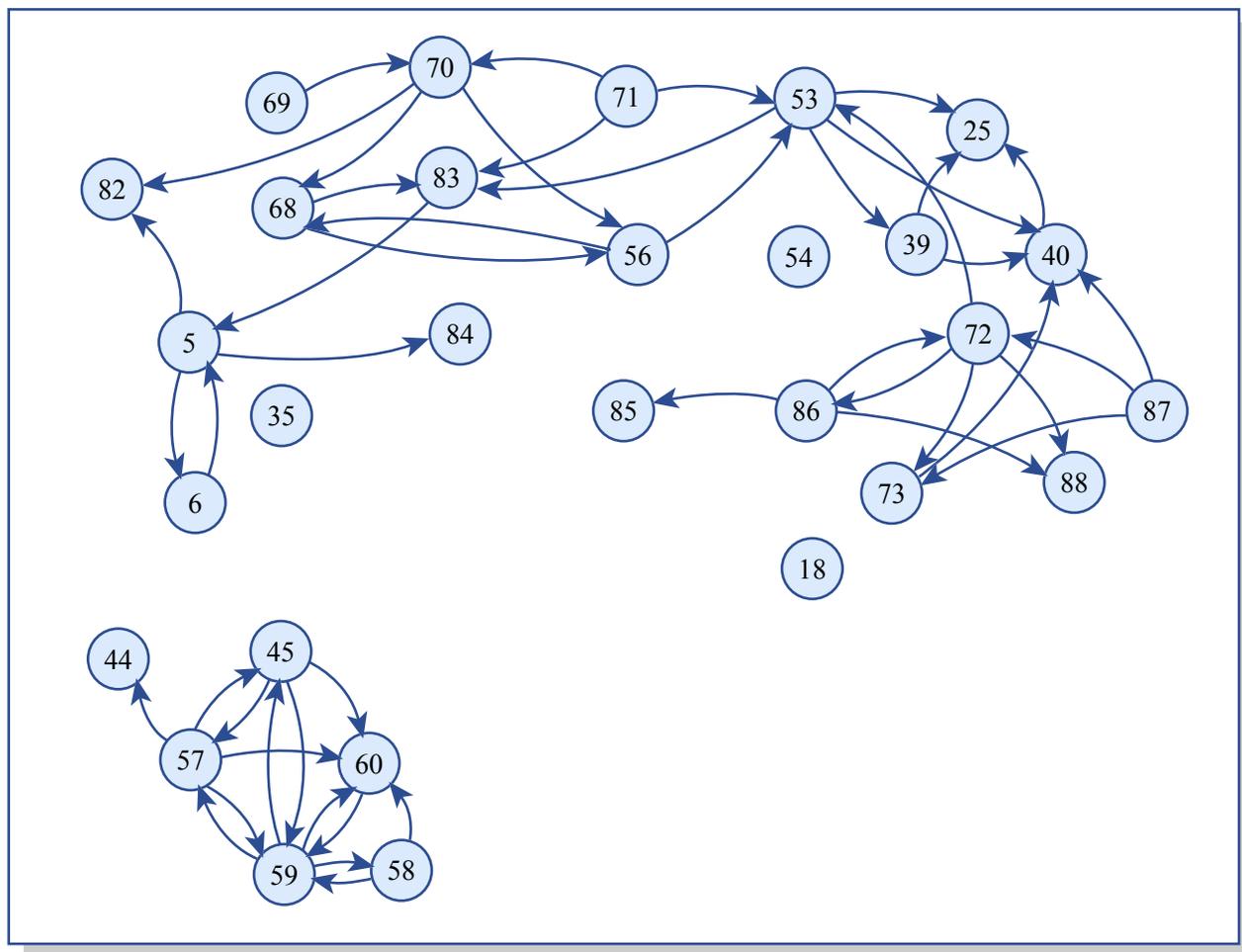
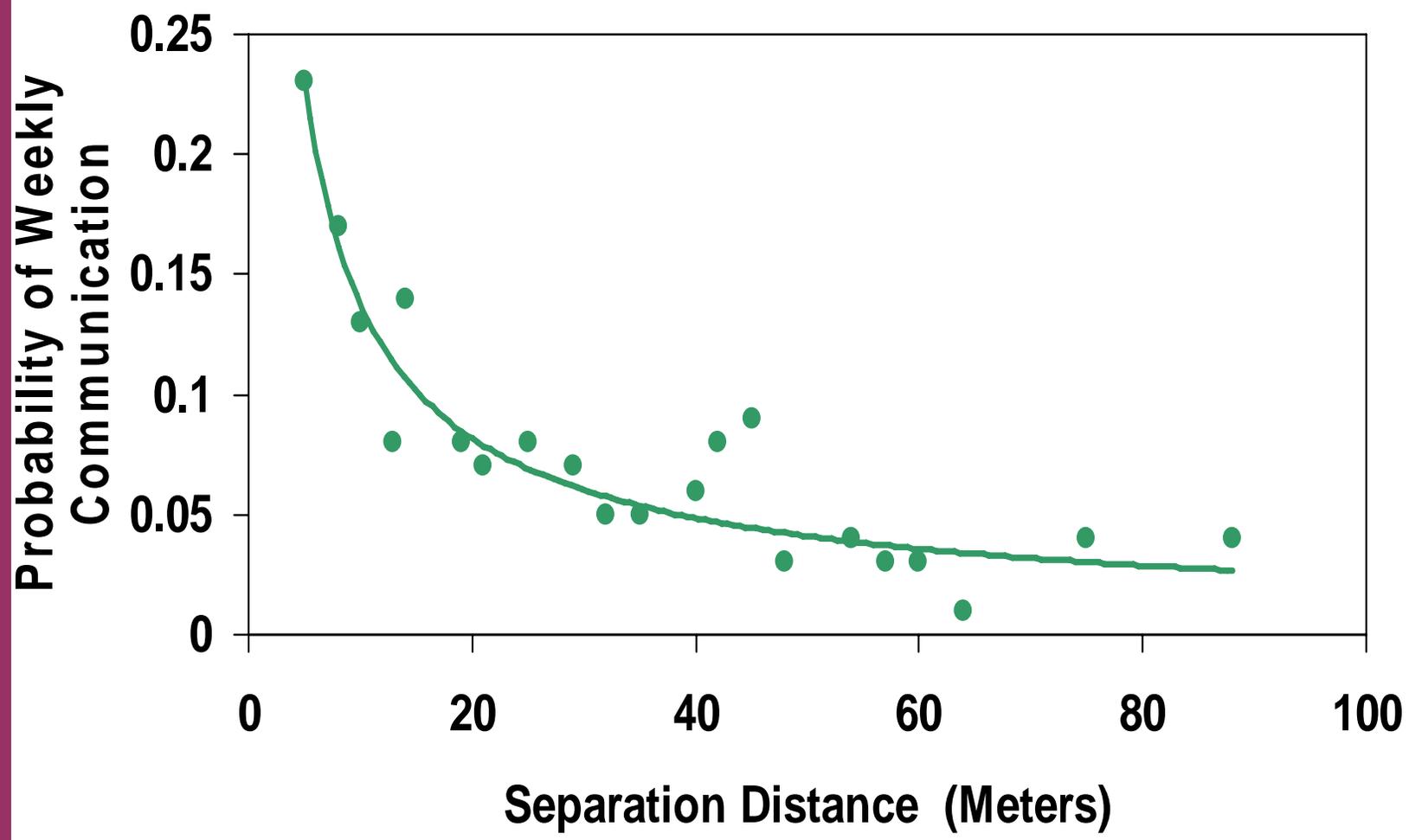


Figure by MIT OCW.



# Probability of Technical Communication as a Function of Distance Between Work Stations



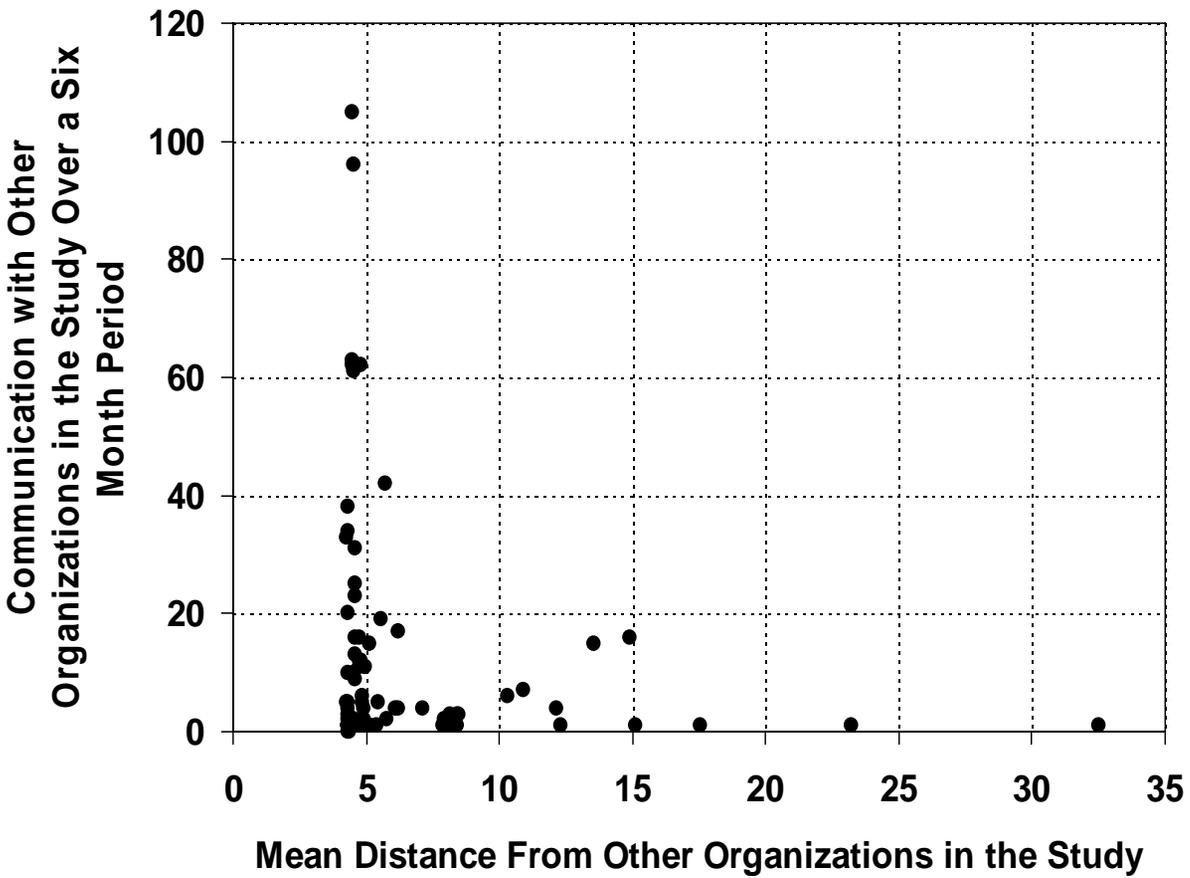


## Does this Effect Extend to Firms?

- Does a similar effect influence communication among firms?
  - If it does, that would argue in favor of geographic clustering.
- To test this, Ron Ozer determined the mean distance of each firm in the study from all of the other firms.
  - He then related this measure to the amount of communication that scientists in each firm reported.

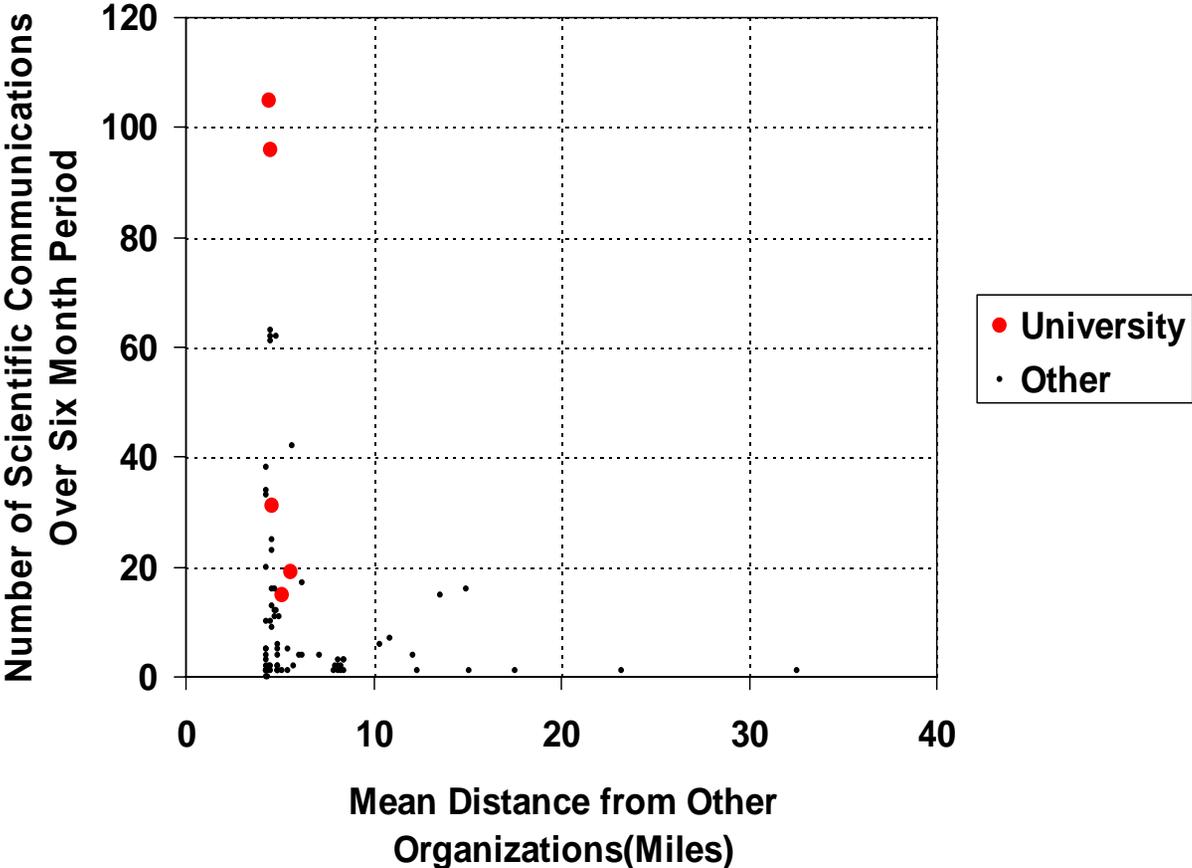


# Communication Reported By Scientists in Each Organization as a Function of Mean Distance From Other Organizations



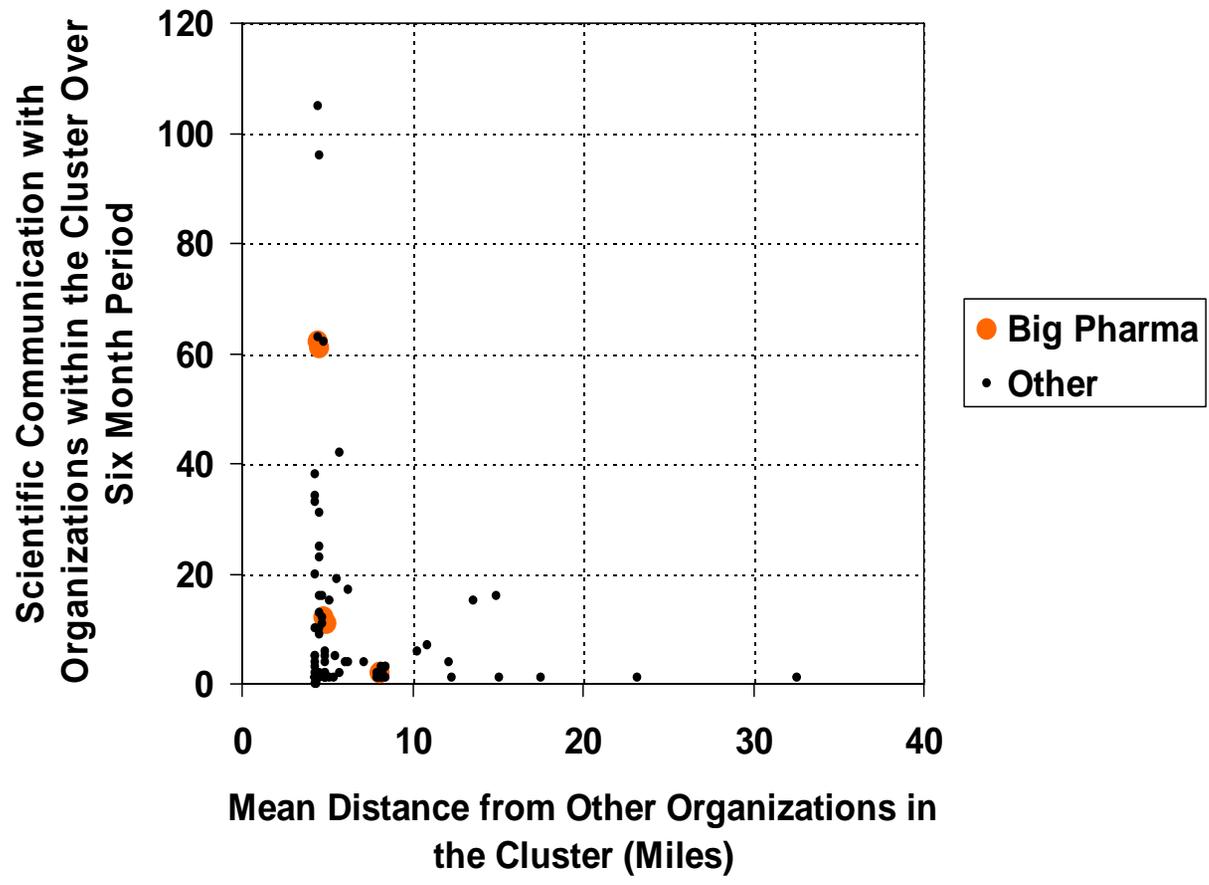


# Universities



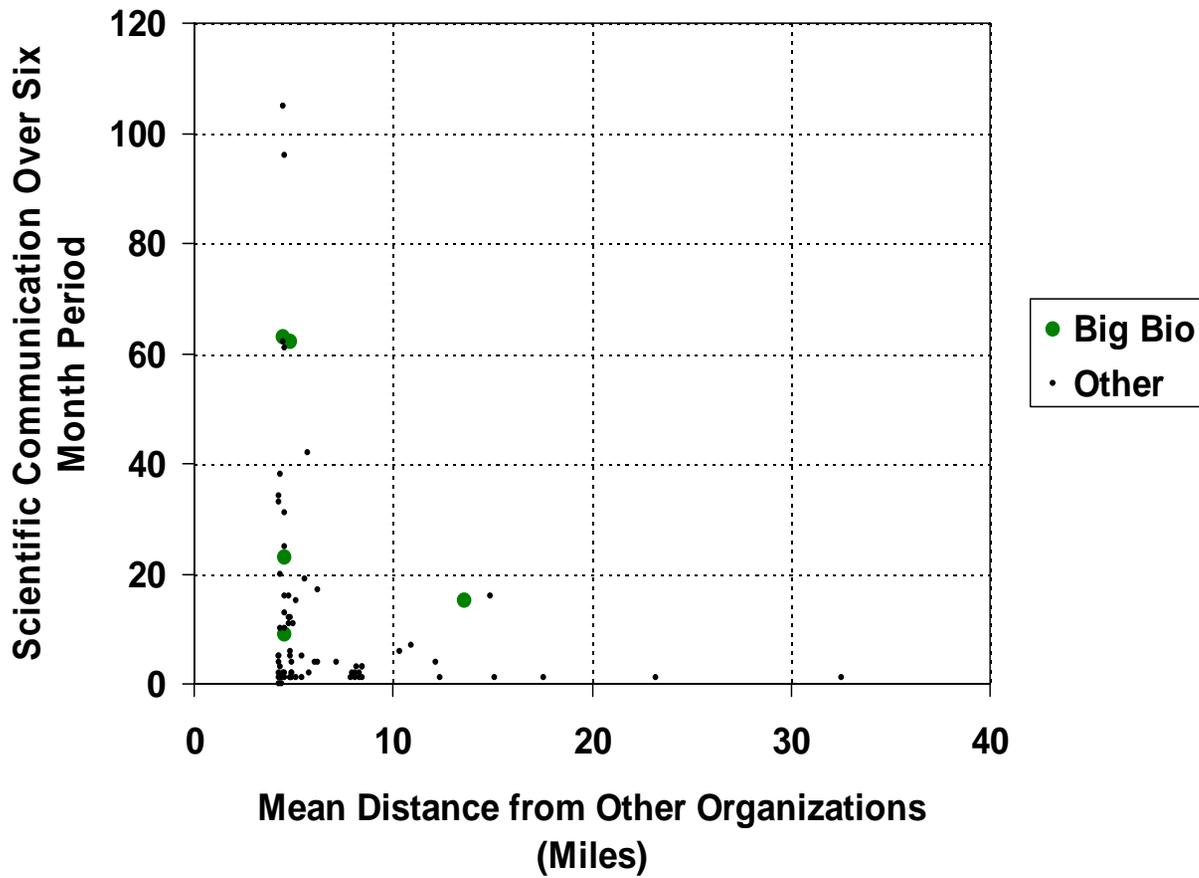


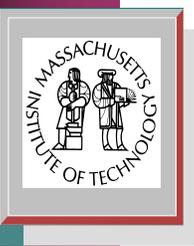
# Big Pharma





# Big Bio





# Where To From Here?

- What more can we learn?
  - Analyses of the network to relate network position to firm performance.
    - Comparison between cluster 'members' and firms in the control group.
    - Long term growth.
      - Size, valuation, etc.
    - Patent filings
    - Investigatory New Drug Applications
    - Etc.
  - Follow-up interviews to flesh out the network results.
  - Advice to the many geographic regions attempting to stimulate the growth of similar Biotech clusters.
- Is this the new model for doing R&D?
  - How do individual firms capture the gains?