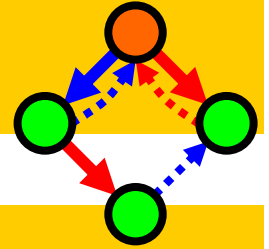To explain all nature is too difficult a task for any one man or even for any one age. `Tis much better to do a little with certainty, and leave the rest for others that come after you, than to explain all things. Isaac Newton.

Artificial Biochemistry

Conclusions

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Trento, 2006-05-22..26

www.luca.demon.co.uk/ArtificialBiochemistry.htm

Summary

- Molecular Biology and Systems Biology
  - "Don't panic": it's incredibly complex, but there is continuous progress.
  - Much of the recent action is in understanding information flow.

- Stochastics
  - The foundation of chemical and biochemical processes.
  - Recently embedded in process calculi and languages.

- Chemistry
  - How to model it in process calculi.
  - How to convert to/from it.

- Biochemistry
  - How to model it in (more advanced) process calculi.
  - Circuitry based on biochemical assumptions.

- Genetic Networks
  - How to model them (by a different paradigm) in process calculi.
  - Investigating puzzling experimental results.

- Membranes
  - Examining some basic biological invariants.
  - How to model them in (even more advanced) process calculi.

End Point
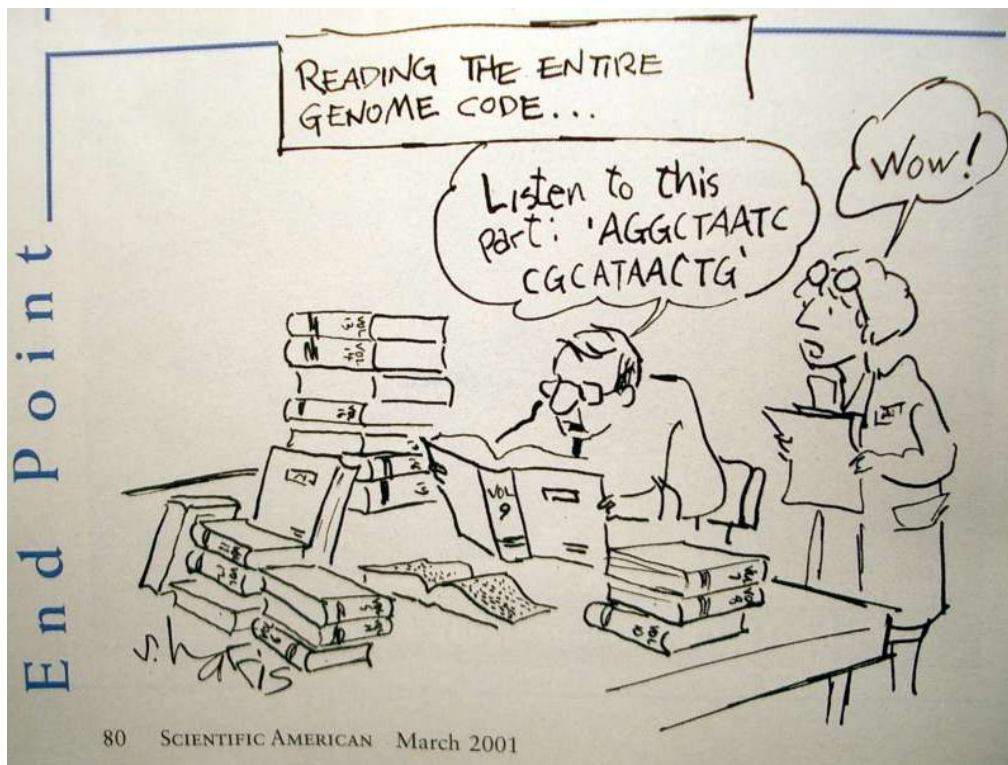
Q: "The data are accumulating and the computers are humming, what we are lacking are the words, the grammar and the syntax of a new language..."

D. Bray (TIBS 22(9):325-326, 1997)

A: "The most advanced tools for computer process description seem to be also the best tools for the description of biomolecular systems."

E. Shapiro (Lecture Notes)

END