Precompetitive Oncology Biomedical Research

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Danger   Opportunity

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The Fast-Growing Ecology of Collaborative Research

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Greater Potential for Breakthroughs

Opportunity

- Wider exploration, broader translational research

- Richer mix of scientific disciplines, especially those tangential (or alien) to pharmacology

- Greater involvement of scientists with personality traits more likely to foster breakthroughs

- Broad cross-pollination, conducive to the recombination of knowledge

- Lots of variances, freedom to engage in paradoxical thinking, and operate at the interface between disciplines

- Passion, driven by vision, untamed by routine

- Reward system driven by meritocracy, fun, 'coolness', and the exhilaration of pushing the boundaries of knowledge just because it's possible

Greater Potential for Dysfunctionalities

Danger

Faster science magnifies dysfunctionalities, which could end up slowing biomedical innovation

- Regulatory gaps: regulations must co-evolve with science
    - What is the process to provide timely regulatory guidance for tomorrow's breakthroughs? (or yesterday's breakthroughs, e.g., stem cells, nanotechnology, customized therapies with a trial size of 1)

- Knowledge gaps: 40% of genes remain unknown, undermining the Critical Path Initiative's goal of achieving greater predictability in drug R&D

- Scientific breakthroughs can cause 'creative destruction', which threatens vested interests, but is also a potent driver of wealth creation
    - There needs to be better processes to educate and manage concerns so that we can remain a science-driven society

Conclusions

- Precompetitive collaborative research is here to stay

- It is proceeding much faster than expected

- It is much bigger than big pharma and biotech

- It has the potential to renew the aging pharmaceutical research model and create enormous value

- It could all come to naught (or little) without the resolve to address the system's dysfunctionalities