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Roundtable on Strategies for SNP Genotyping in Core Labs:

Evaluating Costs for Two SNP Platforms

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Cornell University, Ithaca NY USA**



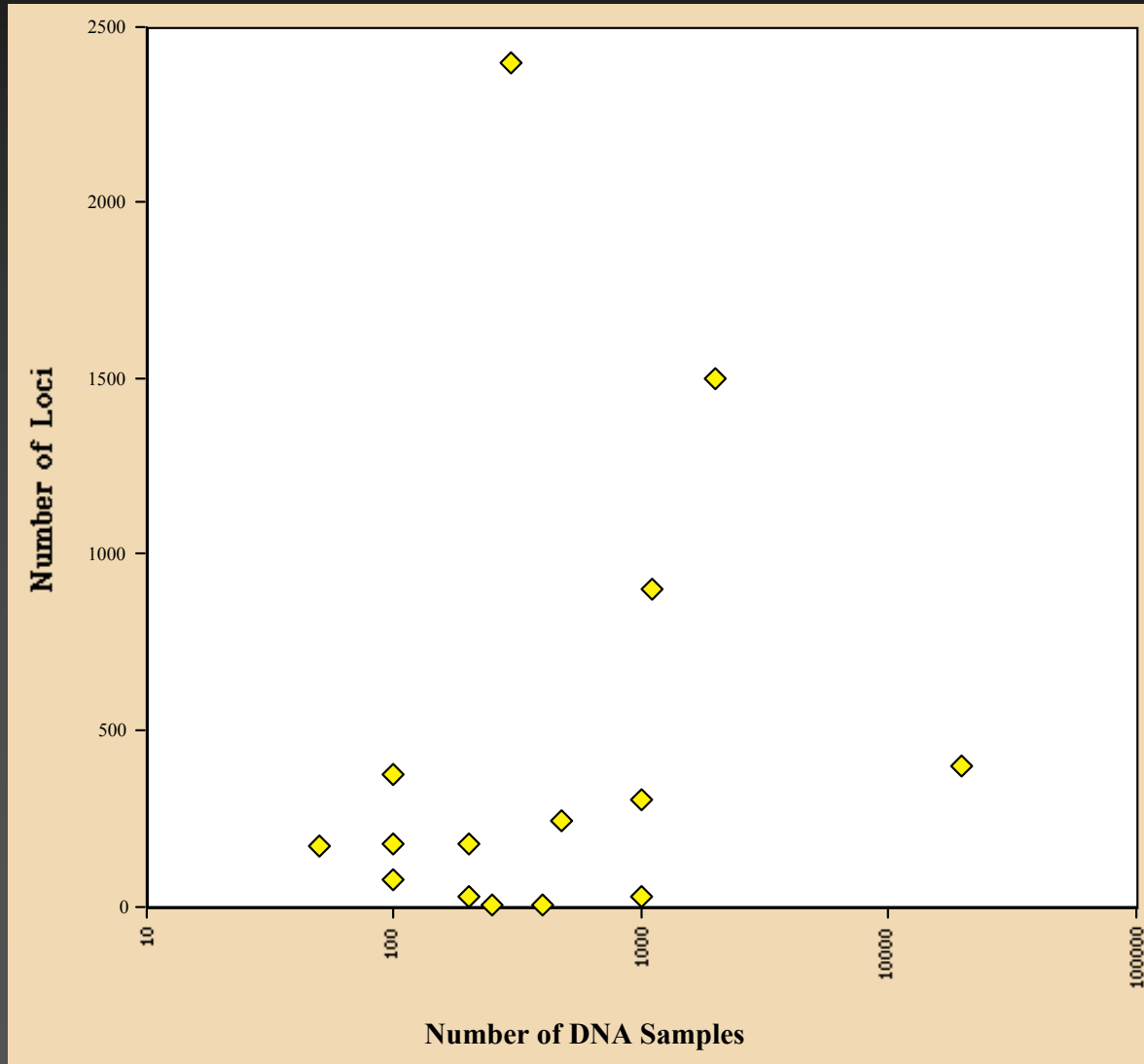
Evaluations

- Evaluate Needs
 - Size of projects
 - Organisms (model org vs. non-model org)
- Evaluate Resources
 - Financial Resources
 - Recharge vs. Not-for-profit vs. Subsidized
 - Personnel Resources
 - Automation
- Predicting the Future



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Cornell Projected SNP Projects (mid-2004)





Additional Factors:

- Integration with other technologies
- Portability to other institutions/Shared Resources
- Improvements to existing technologies
 - More multiplexing
 - Simplified protocols
 - Robotics
 - Improved bioinformatics
 - Software improvements
- Emerging Technologies



Technologies Driving Lower Costs:

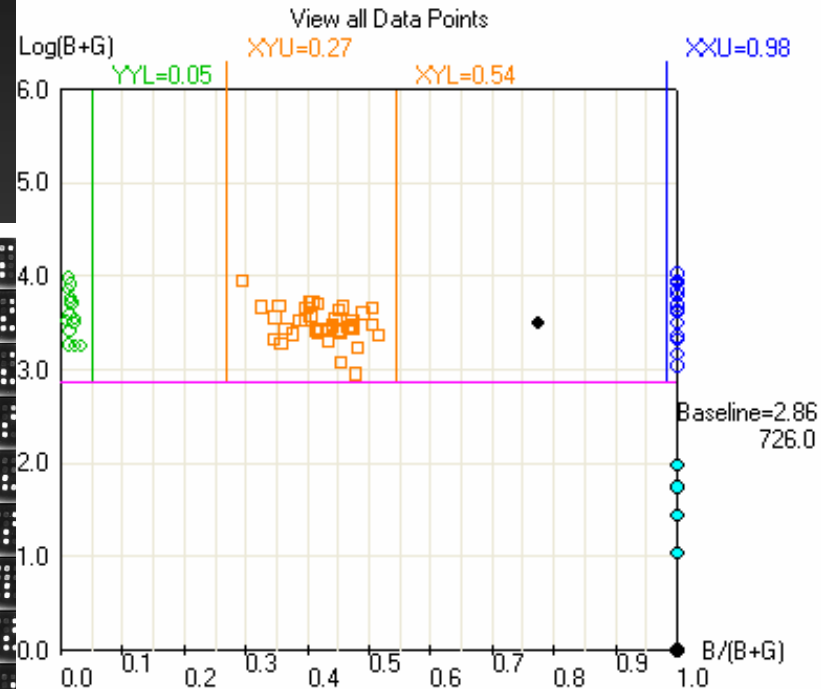
Multiplexing Tag Arrays/Universal Tags

- SNPstream
 - SBE technology
 - Conventional multiplex
 - 12 to 48-plex
 - Simpler protocol
 - Robotics-friendly
 - Hybridization to 384-well Microarray
- SNPLex
 - OLA technology
 - Universal Primer multiplex
 - 48-plex
 - More complex protocol
 - Robotics possible
 - Fragment analysis on 3730/3130

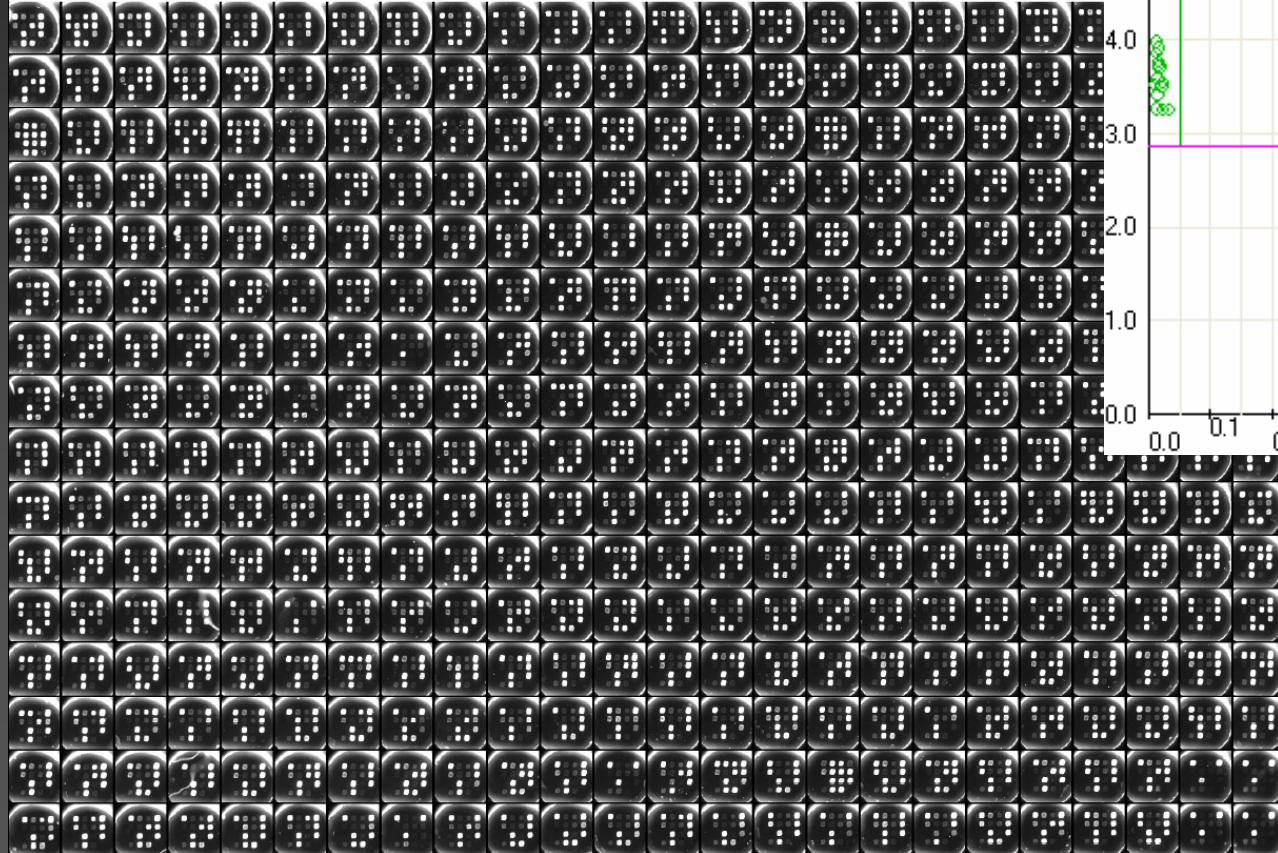


SNPstream data

Current spot: (1,2) SNP: APCDSNP37_GA at Segment 4 of plate: 13006702
Total: 75 XX: 15 XY: 39 YY: 14 NEG: 4
Org Fail: 0 Geno Fail: 3 QC Fail: 0 Empty: 0
Call Rate: 68/71 = 95.77

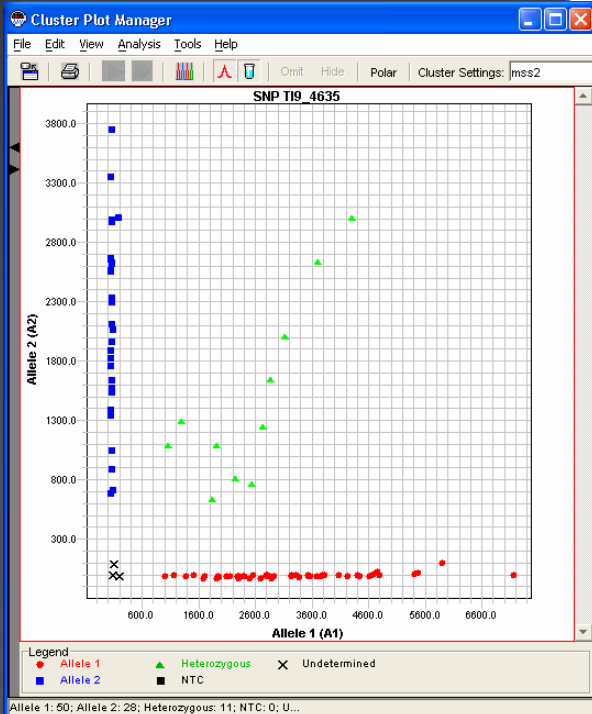
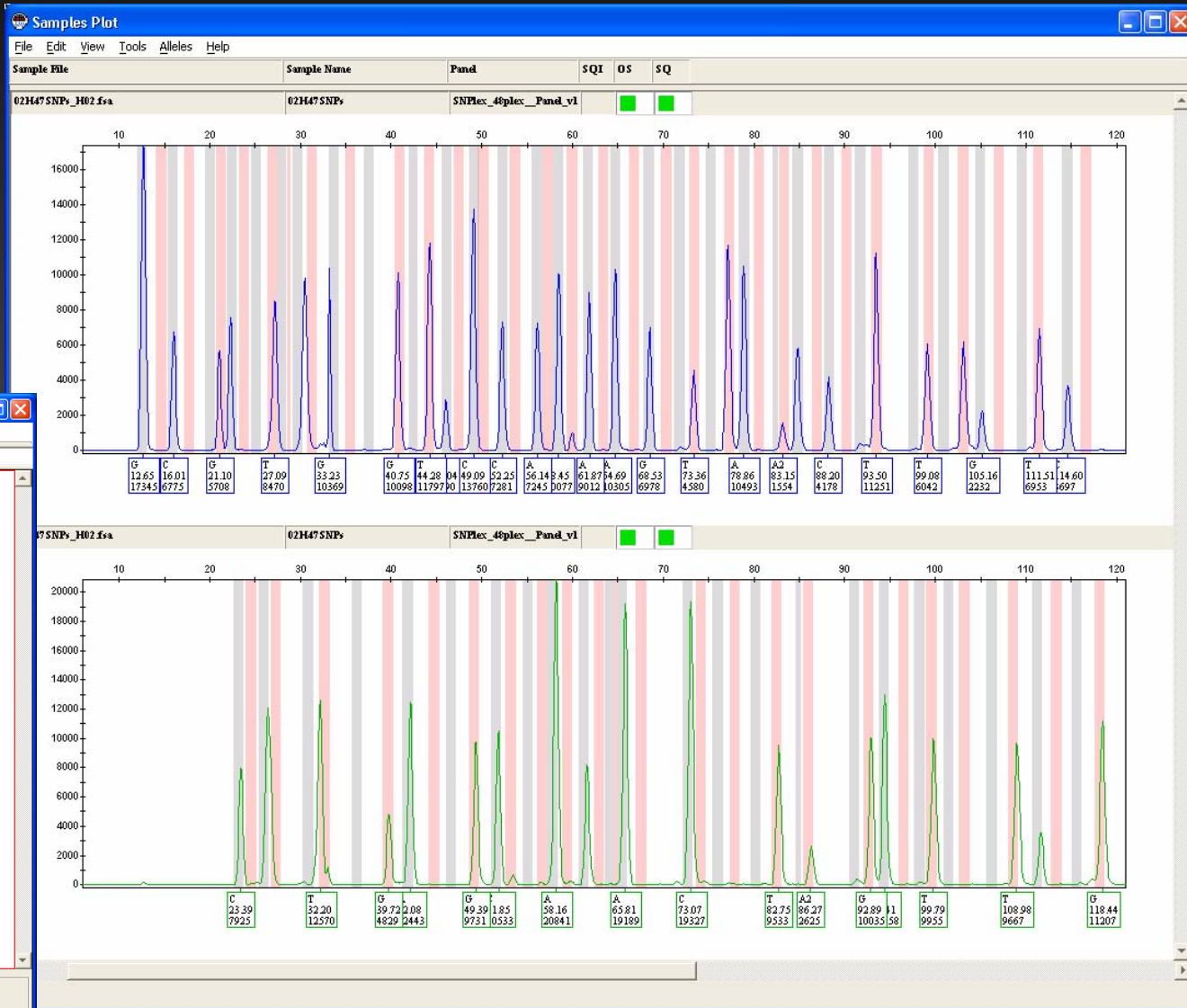


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SNPlex





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What is the true Cost per Genotype?

Fixed cost + Variable cost + Labor cost + Instrument cost



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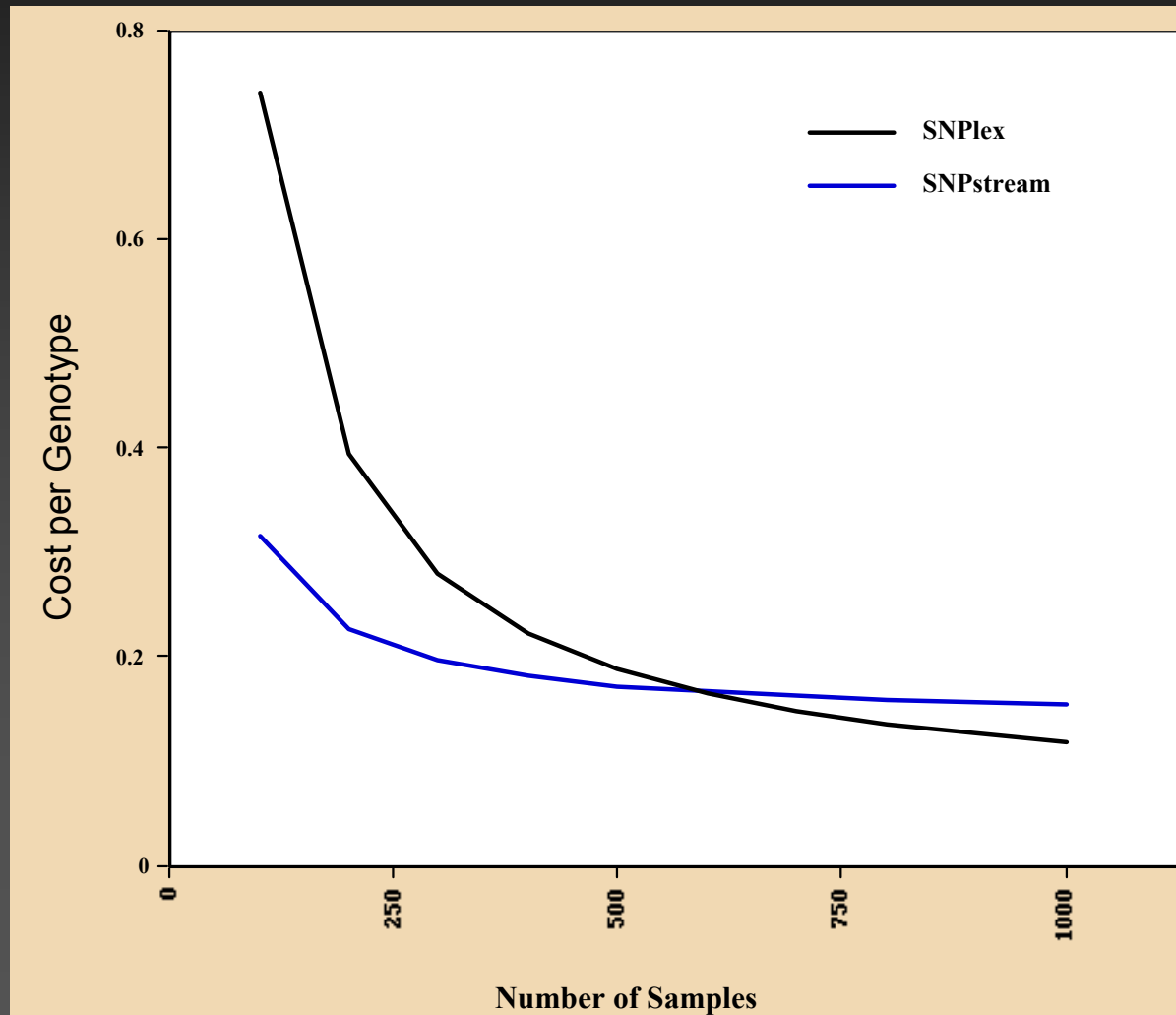
Fixed cost + Variable cost + Labor cost + Instrument cost

	Fixed	Variable
SNIPlex	0.06	69
SNPstream	0.14	18



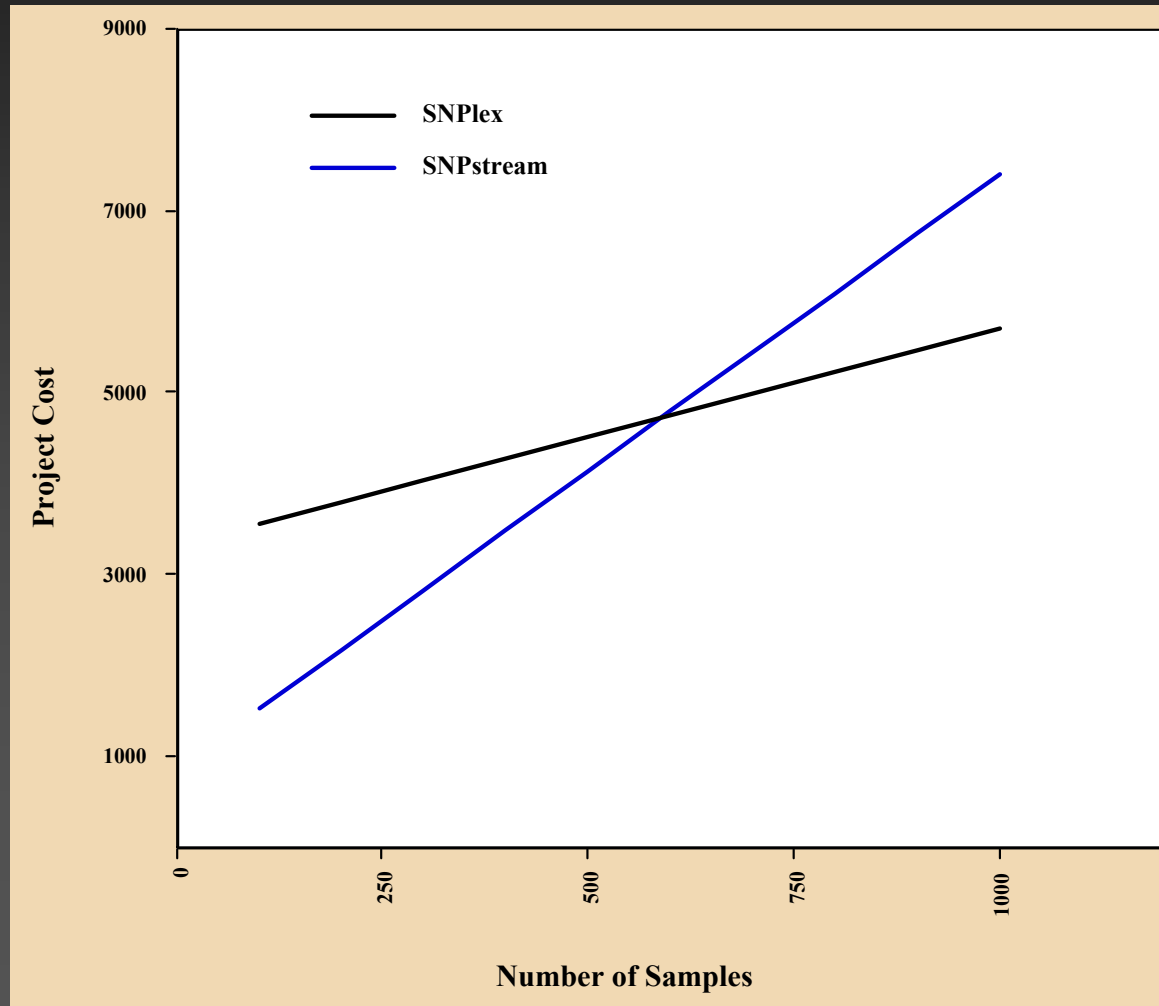
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Cost per Genotype (no labor or instrumentation costs)





Total Project Cost, 48-plex (no labor or instrumentation costs)





Labor Costs:

Fixed cost + Variable cost + **Labor cost** + Instrument cost

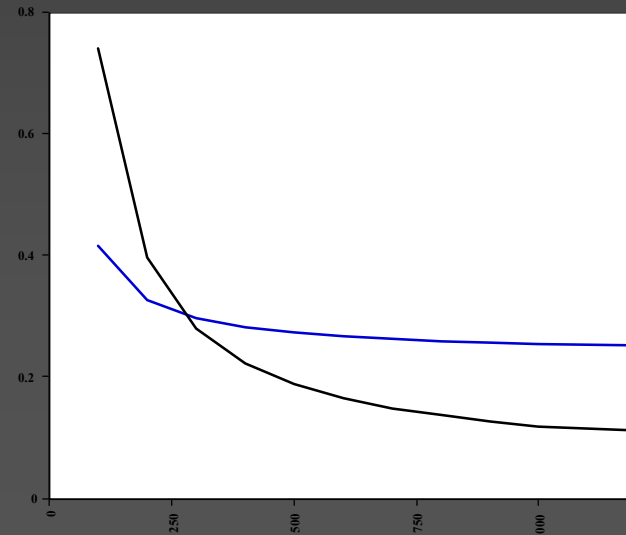
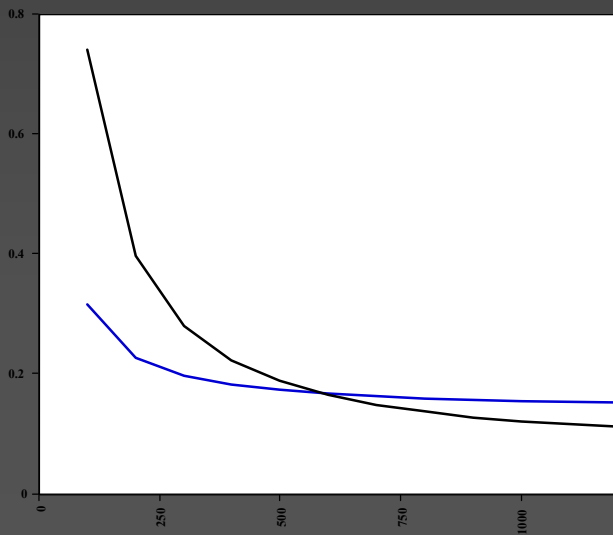
- Who performs the labor? Core or User?
 - Full service or Analysis only?
- Access to Robotics?
- How are labor costs determined?



Instrumentation Costs:

Fixed cost + Variable cost + Labor cost + **Instrument cost**

- Instrument acquisition (depreciation) and service contracts add to cost





Instrumentation Costs: Benefits of Multifunctionality

- Instrument Depreciation/Service Contract Costs spread over more users/samples
- Cost for *other* services lowered (Sequencing and Fragment Analysis) by distributing Depreciation/Service Contract to SNP Genotyping Services (for shared instrumentation)



Regional Centers/Cooperation Between Institutions?

- Transportability e.g. SNPstream, FP, MS
- Most Core Facilities accept samples from external institutions, but with added cost.