



# Dollars and Sense

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# Objectives

- Lab Start-up Costs and Considerations
- Ways to stretch your dollar

Running a Lab = Running a Small  
Business

Not at all the same as personal  
finances

Money in = Money Out (No  
savings plan!)

## CONSIDERATIONS WHEN BUDGETING FOR LAB-STARTUP

In general a 3-yr budget to get you up and running (some institutes offer 4-5 yrs)

Start-up packages vary. Most med schools: \$600 -1.5M for a junior faculty tenure-track professor

Most institutes ask for a “wish list”

Some have a set number (\$\$)

5 major components of a start-up budget:

- 1) major equipment
- 2) Personnel (tricky!)
- 3) supplies/consumables
- 4) animal care costs
- 5) Etc.: Core user fees, Maintenance Contracts, Travel, publications, computer maintenance, office supplies

- Major equipment: refrigerators, cell culture hoods, PCR machines, centrifuges, microscopes, flow cytometers
- Annual service contract costs between 10% and 20% of the equipment's acquisition costs.

# Equipment: Wish list

## **Major Equipment (\$150,000)**

Nikon TiE Epifluorescence microscope or equivalent (fully equipped for live cell, long duration (16-48hr) experiments)	\$150,000
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## **Minor Equipment (\$280,000)**

Item	Cost
Water Jacketed Cell Culture Incubators (\$9000 X 2)	\$18,000
BioRad V3 Electrophoresis System and ChemiDoc System	\$35,000
Cell Culture Laminar Flow hood Labconco - Type B2 Biological Safety Cabinet (\$18,000 X 2)	\$36,000
BioRad CFX96 Touch System for Real Time-PCR (Will use heavily)	\$35,000
Bacterial Cell Shaker/Incubator	\$14,000
-86C Freezer	\$18,000
Cryogenic Storage Tank	\$6,000
-20C Freezer	\$4,000
Inverted Compound Microscope (Cell Culture use)	\$5,000
Desktop Computer Systems (X4) / Software Licensing / Back-up NAS Server	\$15,000
Tecan Microplate Reader or BMG Labtech CLARIOstar or Perkin Elmer Victor (luminescence, fluorescence, absorbance reader with dispensing capability)	\$40,000
Multi-Therm Shaker	\$3,000
Refrigerated Microcentrifuge	\$7,000
Non-refrigerated table top Microcentrifuge (\$2500 X 2)	\$5,000
Refrigerated swinging bucket centrifuge	\$15,000
ZOE Cell Imager	\$15,000
GE Amersham Nanovue UV/Vis Spectrophotometer single droplet	\$10,000

Only one university asked me for quotations.

Understand the concept of capital expense

Be prepared to get competing quotes

Understand the purchasing approval process at your institute

# Personnel

- YOU! (10-100%) “hard” money versus “soft” money
- PostDocs = 50-60k
- Graduate Students = 30-40k
- Techs = 30-55k
- Undergrads = free – small stipend
- Research Associates = varies

Consider the cost of training

Consider overhead costs (insurance, tuition, fringe benefits)

Understand the concept of exempt and non-exempt employees

# Supplies/Consumables: \$1000-\$3000/PP/PM



10X PBS	DG		46-013-CM	Corning/Core Store	81.18	4/6	case (6)	DG	4/9	IG
Digital Thermometer Neoteck 2 in 1 Hygrometer	IG	3/26		Amazon	14.99	4/6	1	DG	4/11	YS
Exonuclease I	for Rach Jr	4/6	M0293S	NEB/Core Store	51.27	4/6	1	DG	4/9	SB
rAPID Alk Phosp	for Rach Jr	4/6	4898133001	Thermo/Cores Store	111	4/6	1	DG	4/9	SB
1.5mL eppendorf tubes	IG	4/6	100430	supply store	28.64	4/9	3	DG	4/10	IG
Bleach	IG	4/6	100131	supply store	8.5	4/9	2	DG	4/10	IG
9" pasteur pipettes	IG	4/6		Supply Store	28.25	4/9	1	DG	4/10	IG
DMEM	IG	4/6	D5796-6X500ML	Core store	58	4/9	2x6	IG	4/9	SB
Primers NDRG1+PPFIA4	IG	4/6	-	Core store	12	4/6	4	IG	4/11	YS
LS+ Positive Selection Column, 25 pc.	IG	4/9	130-042-401	Miltenyi Biotec, Inc.	396	4/7	case	DG	4/11	YS
Glove exam PF Sempersure LG JHU only	IG	4/10	c	Supply Store	20	4/12	2	DG	4/18	JD
Glove exam PF Sempersure MED JHU only	IG	4/10		Supply Store	50	4/12	5	DG	4/18	JD
Glove exam PF Sempersure SM JHU only	IG	4/10	c	Supply Store	100	4/12	10	DG	4/18	JD
<b>GFP (D5.1) XP® Rabbit mAb #2956</b>	DG/IG/YJ	4/11	2956	cell signaling/core	278.5	4/11	--	DG	4/12	Beza
PFA 32%	IG/YJ	4/11	15714-S	fisher	74.5	4/16	2bot	DG	4/23	IG
Plymor 2" x 3", 2 Mil (Case of 1000) Zipper Reclosable Plastic Bags	IG/YJ	4/11	2x3 ziplock bags 1000	Amazon	13.62	4/23	1000	DG	4/25	YS
Goat anti-Rabbit IgG (H+L) Cross-Adsorbed Secondary Antibody, Alexa Fluor 350	IG	4/13	A-11046	Thermo Fisher	179	4/16	vial	DG	4/18	JD
50mL Conical	DG	4/16	Stellar Scientific	Amazon	83	4/16	case	DG	4/23	IG
15mL Conical	DG	4/16	Nest Scientific	Amazon	47	4/16	case	DG	4/23	IG
Xerox Print Cartridges (DG Office)	DG	4/16	LD products	Amazon	68	4/16	case	DG	4/30	YS
Methylation kit	DG/rachel Jr	4/16		corestore/zymo	128	4/16	50 rxn	DG	???	DG
E-cad-647 again! (mouse/human)	DG/YJ/IG	4/18	147307	corestore/biolegend	79.8	4/18	25ug	DG	4/19	IG
Mouse Cell Depletion Kit - 2ml	IG	4/18	130-104-694	Miltenyi Biotec, Inc.	836	4/23	2 mL	DG	4/26	IG
cell scrapers	JD	4/20	amazon	celltreat	38	4/23	100	DG	4/26	IG
Lidless Clear 96 Well Plates for Bradford Assays	JD	4/20	9017	corning	107	4/27	100/case	DG	5/1	YS
Prolong Diamond Antifade	YS/IG	4/25	P36962	Molecular Probes	201	4/29	10mL	DG	5/1	SB
Sybr Green	JD/IG	4/26	1725122	biorad/core	864	4/27	20ml	DG	5/1	YS
Ecad Primary Antibody	JD	4/26	<b>20874-1-AP</b>	proteintech	279	4/30	full	DG	5/1	IG
TFF1 sample ab	JD	4/30	13734-1-AP	proteintech	99	4/30	sample size	DG	5/1	IG
Drummond Pipet-Aid Replacement Filters	JD	4/27	4440-0510	USA Scientific	23.5	4/29	case = 5?	DG	5/2	JD
Paper Towels	IG	4/27	100450	Supply Store	23.58	4/27	case	DG	5/2	JD
10 uL unfiltered	IG	4/27	F1732012G	gilson	87.68	4/27	case	DG	5/1	YS
1 mL unfiltered	IG	4/28	F1735012G	Flsher	87.68	4/27	case	DG	5/1	YS
Large Kimwipes	IG	4/29	202640	supply store	52.84	4/27	case	DG	5/2	JD
15 cms	IG	4/30	100031	Supply Store/Falcon	107.06	4/27	case	DG	5/2	JD
5 mL Serological	IG	5/1	1367811D	Fisherbrand	172.59	4/27	8 case	DG	5/1	YS
EGFR methylation and Sequencing primers	RP (rachel jr)	4/30	--	core	10.5	4/30	3	DG	5/3	RP

~\$6500 -> 2 PhD students / 2 techs



# Animal care costs

- Per Diem Cage Costs: ~65 cents per cage per day (50 cages = \$975/month) - Varies by institute
- Genotyping Costs: \$10/mouse Transnetyx (200 mice = \$2000)
- Mouse Costs: \$25-120/mouse (100 mice = \$5000)

Can be equivalent to 1-2 headcount!

# Everything else

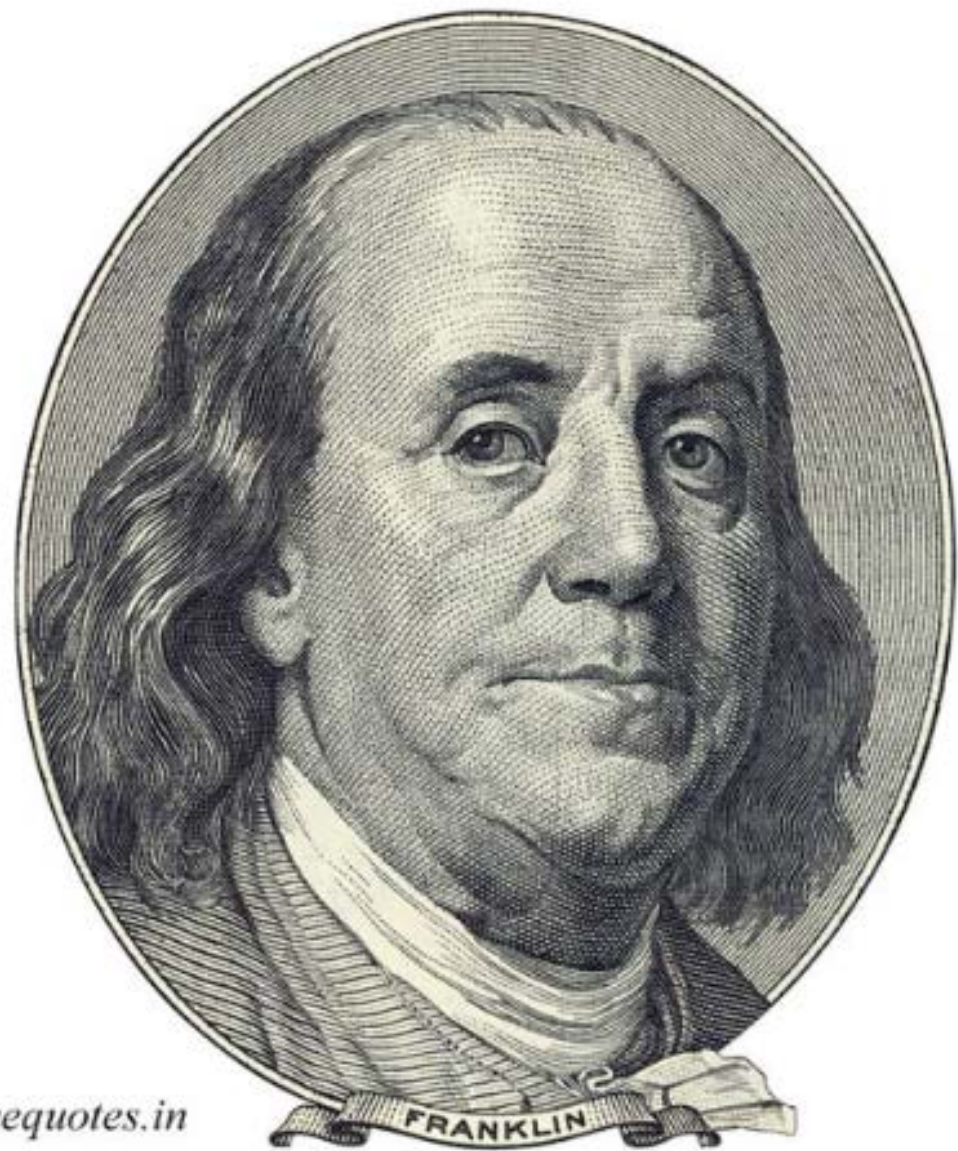
- Core user fees

Confocal Core Charges (PCTB)	543
Histology	147
Sanger Sequencing	120
IIC Charges (Homewood)	200
Flow Core Charges (Caliber/LSRII)	246

- Travel to conferences (self and personnel)
- Publications = \$2000-\$4000 per manuscript
- Computers and Maintenance

A penny saved is a penny  
earned.

*Benjamin Franklin*



[www.thequotes.in](http://www.thequotes.in)

# How to stretch your lab dollars: Equipment

- Consider equipment that is already available (cell culture hood, chemical cabinets)
- ask around if anyone is moving labs – good way to get glassware, chemicals, large equipment
- get multiple quotes, haggle with the vendors, always negotiate 2-3 yrs of warranty – consider free reagents in lieu of a discount on equipment
- Consider purchasing gently used equipment
- Consider leasing or renting

# How to stretch your lab dollars: Supplies

- Monitor your expenses: Keep a good log. This saves on overpurchasing.
- Consider 'luxury' items – Premade gels, PBS, TBS, glasswash services, RNA kits
- Think through experiments to decide what is really worth doing.
  - 10% of our reagents have been purchased but not used or (re-used)
- Consider purchasing in bulk. March, June, September, **December** best time for purchases.
- Look for deals on commonly used lab resources (Sigma does B1G1, Biorad has a promotions page, VWR clearance page; Serum deals Buy 5 bottles get TC plastics for free).
- Almost all companies have a new-lab start-up offers (some are better than others)

# Other Considerations

- Find out whether you can “bank” your start-up funds
- Be aware that if offer includes any type of “underwriting” clause, this may mean that if you do get grant funding, the institutional funding will not be provided.
  
- Re-evaluate by analyzing your spending (Monthly / Yearly): looking back on past expenditures to make an estimate for the future

GOOD READ!

Neuron  
**NeuroView**

CellPr

**Tips for Young Scientists  
on the Junior Faculty/Independent Investigator  
Job Search**

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## Lab budgets: A numbers game

**Hannah Hoag**

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**With careful planning, new faculty hires can stretch their start-up funds to launch successful research programmes.**



Thank You!!