

# The Beginner's Guide to Bad Engineering Presentations

Mark L. Chang

Franklin W. Olin College of Engineering

v1.10-Hartford November 9, 2007

# Outline

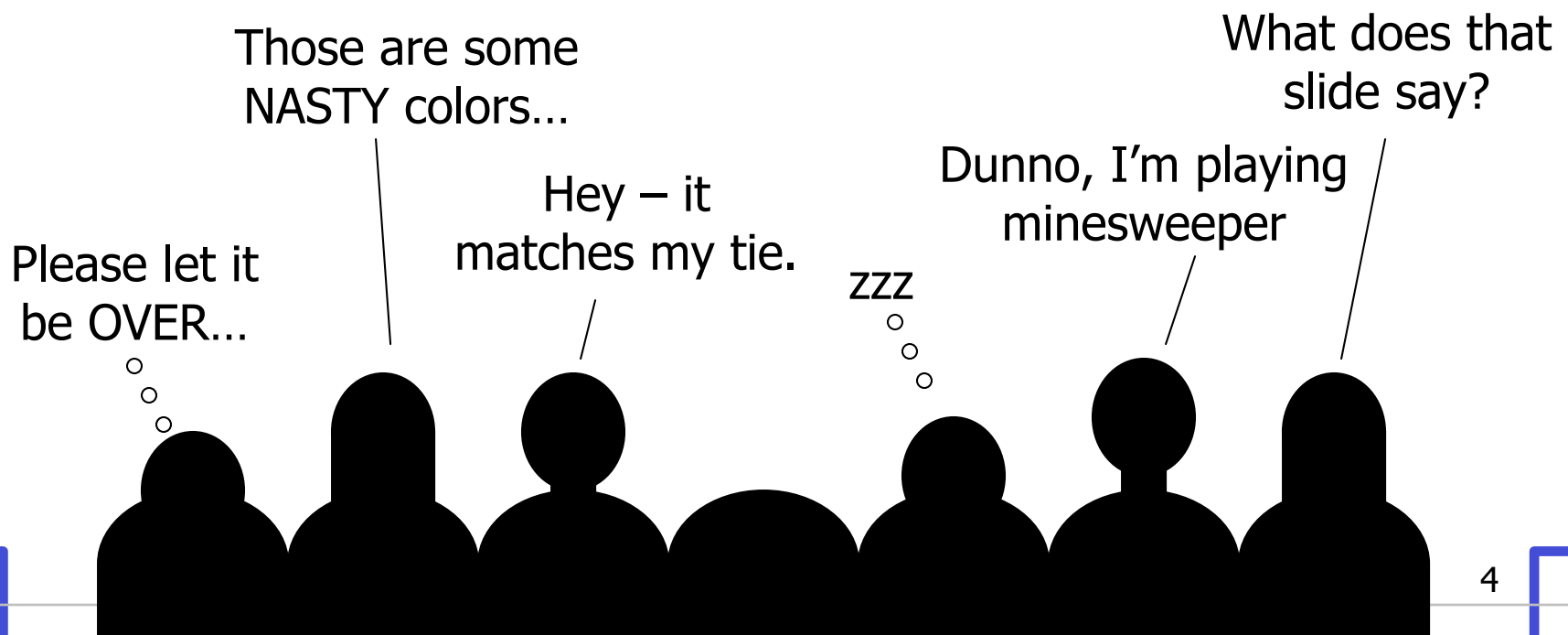
- Title Slide
- Introduction
- Outline
- Meat of my presentation
- Results
- Conclusions

# Outline

- Just start the presentation!
- Everyone knows what ends up in a presentation
  - You don't have to remind us
- Surprising the audience is not a bad thing

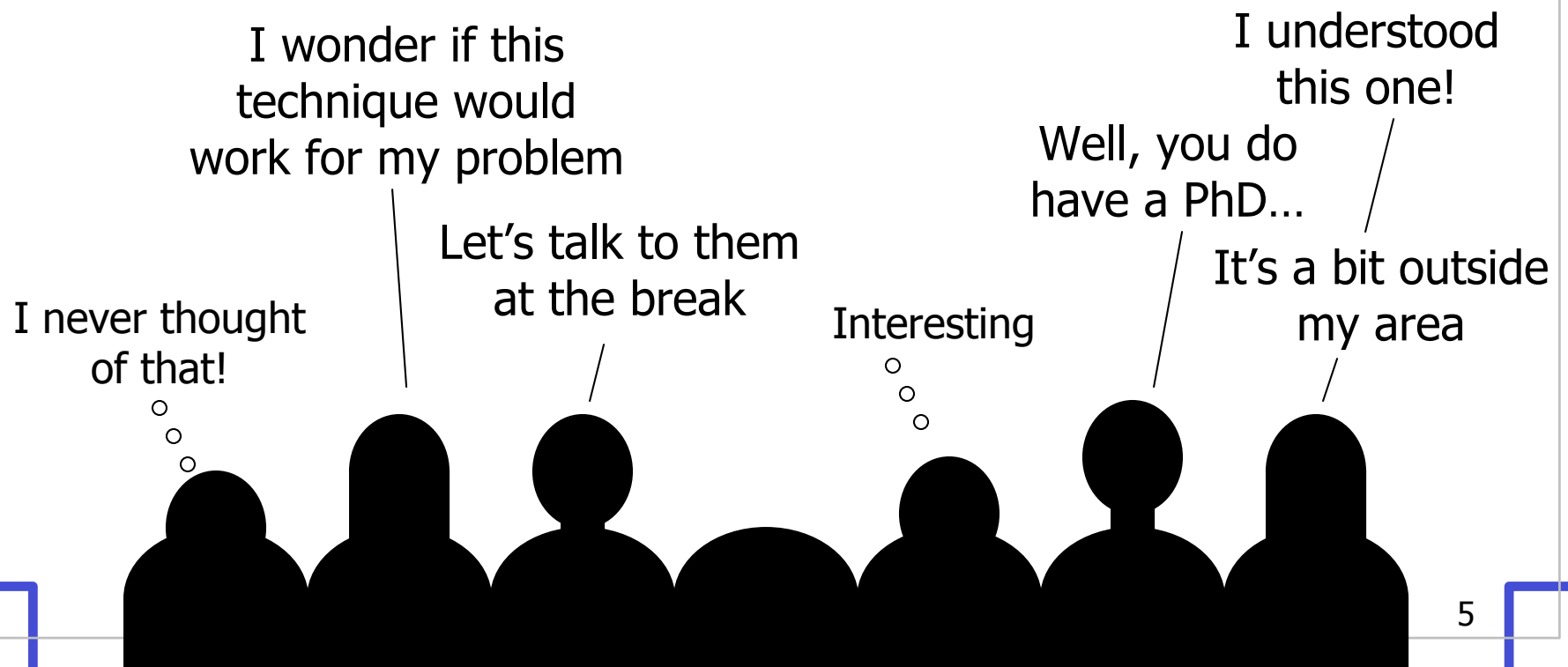
# Bad Presentations

- Audience won't see your work is great
- Will make fun of you from back row



# Good Presentations

- Interesting topic, explained at the right level
- Slides are understandable and easy to see



# Know Your Topic

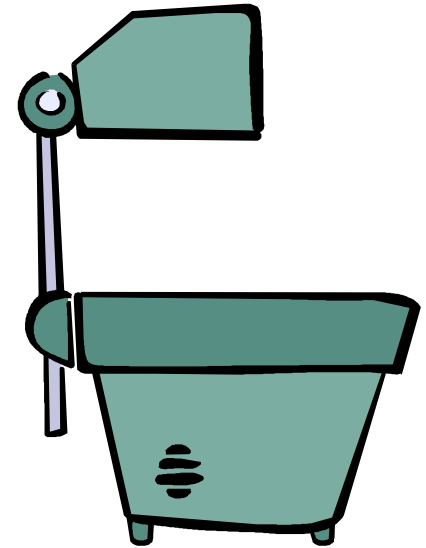
- Be prepared to get questions!
- Know *WHEN* to say “I don’t know”
- Know *HOW* to say “I don’t know”
- Don’t just stand there uncomfortably
- Be able to recover from interruptions
- Know what to skip if you’re running late
  - Don’t just talk faster!

# Know Your Audience

- Do they have a background like yours?
- How much hand-holding?
- Can you jump right in to specifics?
- How much motivation for your work?
- How detailed should you get?

# Know Your Location

- Need to bring a laptop?
- Need to bring a CD, or email a PPT in advance?
- Need to print transparencies?  
How far is audience from screen?
- Can you point with your hand, or do you need a laser pointer?





# Attitude. (Yours)

- Are you **INTERESTED** in your topic?
  - If no, get a different one!
  - If yes, **ACT LIKE IT.**
- If *YOU* aren't excited...
  - Can't expect *OTHER* people to be!
- Don't talk down to audience
  - You know more than them about **THIS...**
  - They know more than you about other stuff



# Dead Man Talking

- Are you hiding behind the podium?
- Are you engaging your audience?
- Are you staring at your advisor/boss?
- Are you staring at your laptop?
- Are you staring at the screen?
- Is your back to the audience?

# Speed Kills

- Calm down. E-nun-see-ate.
- It's not a race
- Take a bottle of water up to the podium with you
  - Bottles if you can work a cap (better for spillage)
  - Glass if you don't have a free hand

# Amplification

- Feedback kills people
- Most PA systems are tuned so that the microphone can be down in the middle of your chest
  - Not 2mm from your mouth
- Modulate your voice evenly

# Where are your hands?

- You have a set of “moves” that you will repeat
- Make sure they aren’t silly looking
- Don’t point with your middle finger
- Record your presentation if possible
- Practice in front of mean friends



# Look Ma, I have a L-A-S-E-R!

- If necessary, get a laser pointer
- Get it a few weeks before your talk
  - Get all the silly laser-pointer play time out of your system now
- Get a second one for backup

# Common Laser Pointer Moves

- The circle
- The underline
- The back-handed flick
- The epileptic-seizure inducer
  
- **DO NOT POINT AT EVERYTHING**

# Right Here. See?

- Don't point at your laptop screen



# Ummmm, yeah

- Practice makes perfect
- Do not read your slides like a script
- You lose 20 IQ points in front of an audience

# Time Check!

- Keep track of the time
- Learn to adjust your pace to accommodate questions (and answers)
- Make your talk fit into the allotted time
  - Don't assume your 45 minute talk will "just work" in a 15 minute time slot
  - It won't -- customize it!
- Know where you can trim to save time
  - Don't make haste, don't trim the "meat"



# This is not pretty

---

- Everyone uses PowerPoint
- Don't drive home the point by using the stock templates
- Spend 5 minutes and make your own
- Please don't use this one

This is a really long title for this single slide, I should have just summarized

- Most people don't read the title

# README.TXT

- Do not attempt to put all the text, code, or explanation of what you are talking about directly onto the slide, especially if it consists of full, long sentences
- If you do that, you will have too much stuff to read on the slide, which isn't always a good thing.
- Like the previous slide, people do not really read all the stuff on the slides.
  - That's why it's called a "presentation" and not "a reading" of your work
- Practice makes perfect, which is what gets you away from having to have all of your "notes" in textual form on the screen in front of you.
- Utilize the Notes function of PowerPoint, have them printed out for your reference.
  - The audience doesn't need to hear the exact same thing that they can read themselves.
  - The bullet points are simply talking points and should attempt to summarize the big ideas that you are trying to convey
- If you've reached anything less than 18 point font, for Pete's sake, please:
  - Remove some of the text
  - Split up the text and put it on separate slides
  - Perhaps you are trying to do much in this one slide?
- Reading a slide is annoying. We can do that (even if we don't).
- Pictures are worth a thousand words.
  - Do not attempt to make up for your lack of pictures by putting, oh, say 500-750 words on a single slide
- If your audience is squinting, something is wrong.

# Font Size

- You are close to your monitor
- Your audience is far from the screen

Tahoma	TNR	Courier	Comic	Lucida Sans
32 pt	32 pt	32 pt	32 pt	32 pt
28 pt	28 pt	28 pt	28 pt	28 pt
24 pt	24 pt	24 pt	24 pt	24 pt
20 pt	20 pt	20 pt	20 pt	20 pt
18 pt	18 pt	18 pt	18 pt	18 pt
16 pt	16 pt	16 pt	16 pt	16 pt
14 pt	14 pt	14 pt	14 pt	14 pt
12 pt	12 pt	12 pt	12 pt	12 pt
10 pt	10 pt	10 pt	10 pt	10 pt

# Slide Numbers Are Your Friend

See this thing down here?  
Number your slides!



23

# Know Slide Boundaries

- People can't read text that runs off the side of the s

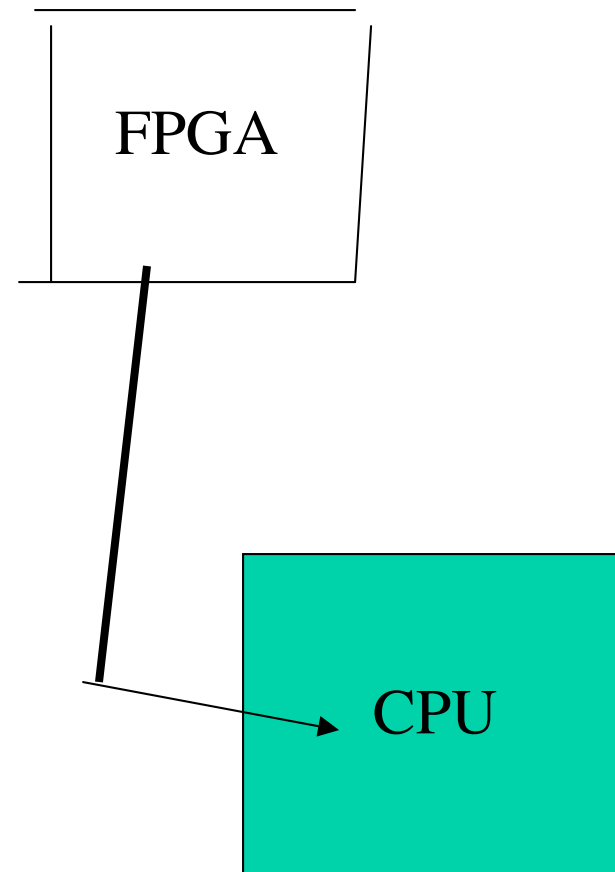


# Speelchick

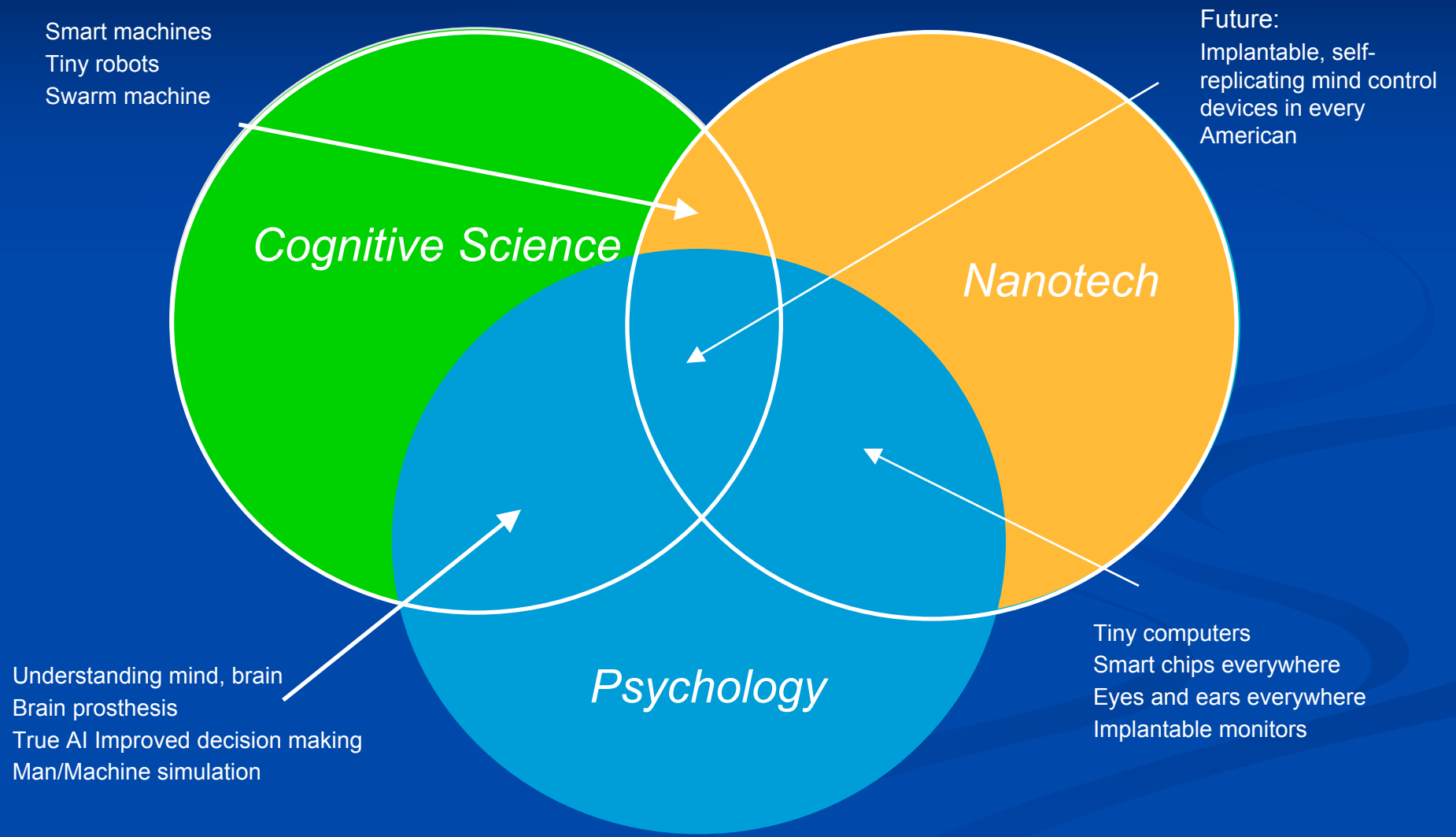
- You sohuld selpl cechk yuor decuumnt to aovid spuidtd eorrrs
- Raed yuor dnmeucot aluod in oerdr to cehck ervey sgninle wrod
- Aoccdrnig to rscheearch at an Elingsh uinervtisy, it deosn't mttar in waht oredr the ltteers in a wrod are, olny taht the frist and lsat ltteres are at the rghit pcleas. The rset can be a toatl mses and you can sitll raed it wouthit a porbelm. Tihs is bcuseae we do not raed ervey lteter by ilstef, but the wrod as a wlohe.

# Line 'em Up

- This is a bad drawing
- Put in some effort



# HOWTO: Mind Control Implants



# Oops, wrong presentation

- Be careful with cut and paste
- Best case: you look dumb
- Worst case: international crisis
  
- Don't get caught hacking together your slides!
- Each talk is unique, and the audience deserves your best



# The Art of Suspense

# The Art of Suspense

- Don't

# The Art of Suspense

- Don't
- Be



# The Art of Suspense

- Don't
- Be
- A

# The Art of Suspense

- Don't
- Be
- A
- Tease

# Anticipatory Lecturing

- Don't Be A Tease
- Rarely, does it accomplish anything
- Let the audience think at their own pace

# You are not Pixar Studios

Animation  
Can  
Be Very  
Distracting

Use it sparingly

# Mommy, my eyes are burning!

- Can you look at this for 45 minutes?
- Colors look different on every LCD projector
- Colors look different between transparencies and projector

# Formulae

$$\begin{aligned}
 X' &= A * B \\
 &= (A - (2^p - 1)) * (B - (2^q - 1)) \\
 &= AB - B(2^p - 1) - A(2^q - 1) + (2^p - 1)(2^q - 1)
 \end{aligned}$$

$$\begin{aligned}
 X'' &= (A - E_p)(B + E_q) \\
 &= AB + AE_q - BE_p - E_p E_q \\
 &= AB + AE_q - (BE_p + E_p E_q) \\
 &= AB + AE_q - \frac{E_p E_q}{2} - \left( BE_p + \frac{E_p E_q}{2} \right)
 \end{aligned}$$

$$f(X', X'') = \frac{\Gamma}{2} \sum \frac{\frac{X' \delta \alpha \max(\phi^2)}{X'' \Gamma^{3/2}} \sum \epsilon \sqrt{AB + AE_q - \frac{E_p E_q}{2} - \left( BE_p + \frac{E_p E_q}{2} \right)}}{\int_R \phi \rho f(\vec{X} | S_k) \frac{1}{(2\pi)^{d/2} \sigma^d} * \frac{1}{P_k} \sum_{i=1}^{P_k} \exp \left[ -\frac{(\vec{X} - \vec{W}_{ki})^T (\vec{X} - \vec{W}_{ki})}{2\sigma^2} \right]}$$

- WTF?

# Results

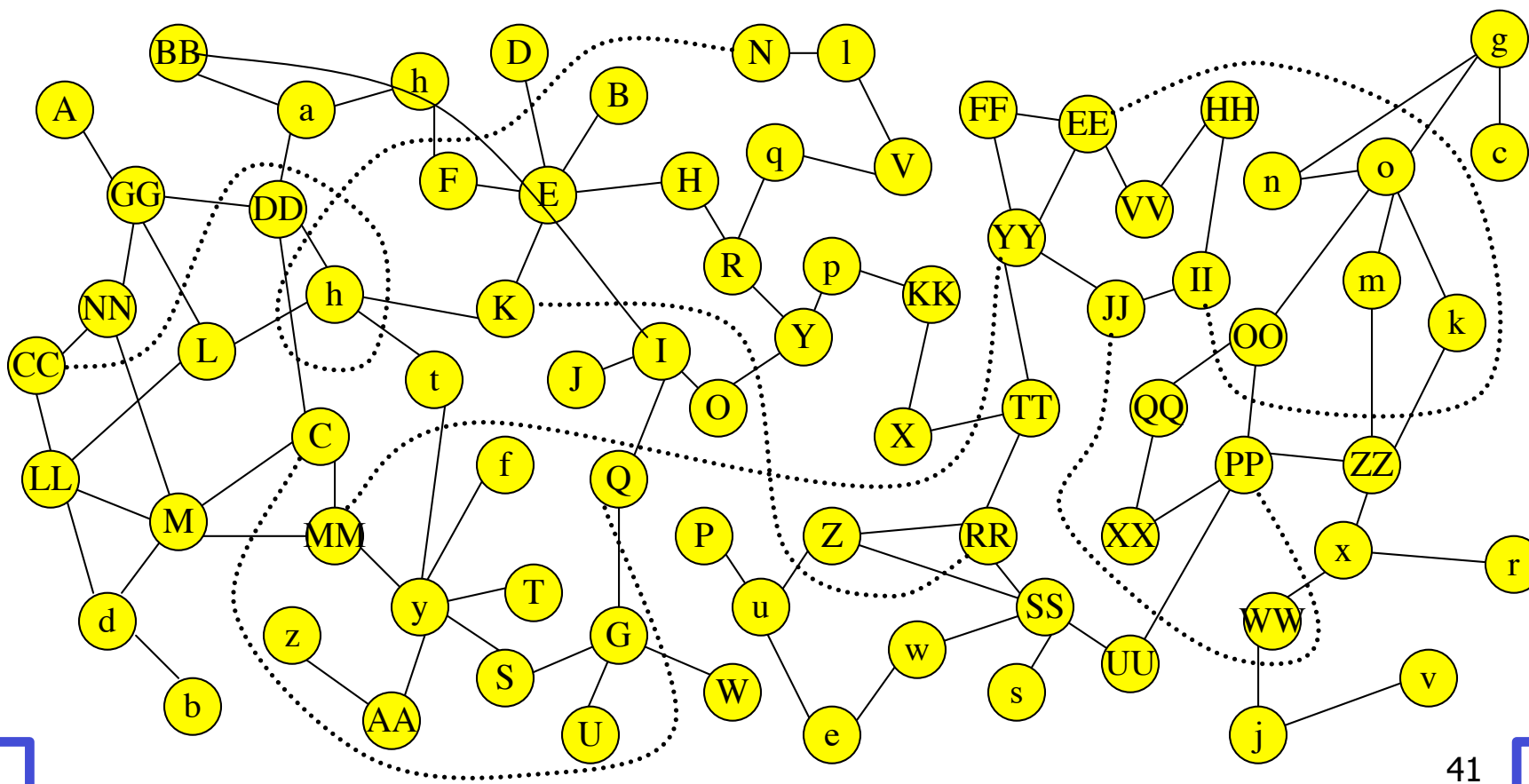
# Interstitial Slides

- They are very segregating and distracting
- Use sparingly



# Use Simple Examples

- This isn't one. It doesn't help.



# Results

- We get it
- You have lots of cool results
- No one can read this
- Show us!

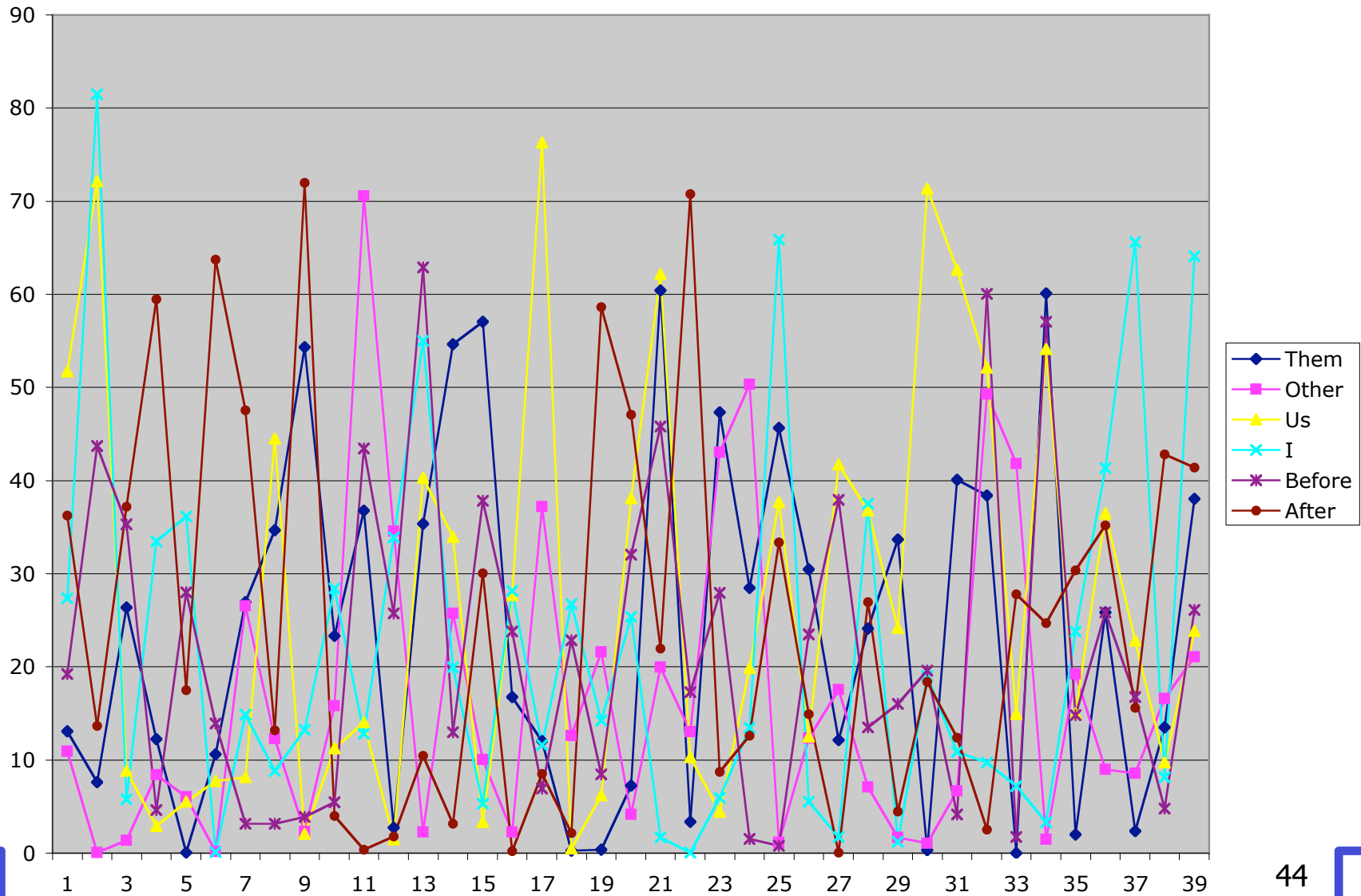
Them	Other	Us	I	Before	After
40.3940826	38.2316751	25.6372343	0.231979	5.97838564	16.137038
27.1600236	15.3189598	0.14126887	0.91070771	16.666003	7.47560438
12.6865773	48.0034516	1.54112603	28.8995276	77.8346978	39.5923434
13.0289203	83.1446895	5.92652876	45.3574405	16.1693959	70.5096592
0.82586068	8.92752585	19.2267186	16.426206	78.523803	7.42377145
40.1506318	10.290092	72.0200882	17.6189939	61.4452984	13.1708744
51.0449432	24.8066678	0.33902392	39.7164154	10.4834284	15.6683264
1.16359584	2.42684847	11.8425954	33.4944265	53.5433441	64.023647
19.4263768	22.5185639	23.9398352	16.2867892	42.1293616	2.01410159
10.3117811	15.8162634	5.53885752	10.0660809	17.9692075	23.8588943
14.0474699	8.93262071	11.520491	3.24783205	0.23447946	5.32553929
43.7011943	25.536406	16.9160983	83.0522375	27.9120913	63.4084397
38.1416624	67.2194476	17.8637183	23.5745846	0.49098186	29.4974951
16.4251123	5.43279702	7.36758268	12.7720866	3.21606913	1.32296792
14.0262993	18.2310641	43.4990419	69.4867009	15.5732955	35.3158642
55.3845807	18.1324811	28.0397121	13.5567432	3.8418546	3.61356423
15.6033237	8.39729079	20.1785801	4.64266033	26.7489849	22.703065
1.16330304	42.5094952	35.0486687	57.0460326	25.326402	32.8252266
26.5564597	13.9572583	27.2817831	12.1112905	2.65263983	22.1076919
79.0469143	47.1866859	5.60027639	0.90539819	34.3643154	5.61810557
14.4054638	14.8566134	0.12482994	7.91942452	94.1886039	38.9710746
13.124464	13.04449	44.5139667	28.2864005	32.2147234	14.5289264
50.2475807	21.9587051	6.15459698	3.15214016	28.1254434	3.38175423
8.28111229	52.2083002	0.93498498	17.3558984	2.47841554	6.53840891
18.4342874	4.23112953	26.1976026	28.3488923	37.2427932	39.647729
8.64879661	40.3200453	11.8799077	37.9616988	62.769779	13.13652
18.8018891	0.72837805	8.44127758	69.5662431	27.450089	26.4034757
68.4806645	44.1278	12.2361269	25.9822623	4.23213647	29.6394421
12.1834625	45.2909249	38.7543814	3.36018455	30.7472854	2.14716688
17.2810954	27.8327198	35.2992767	25.229603	10.4319074	11.9907766
5.15117167	70.1292305	83.3630911	2.22963787	32.552596	69.9086992
76.0731047	4.99345899	0.72104929	8.74106067	18.8139398	5.22837678
33.8096871	22.2373051	33.7871518	26.4662248	30.0513381	11.0391138
53.8651879	34.0251962	54.4992968	3.29027298	0.75212459	1.24047397
0.34775621	14.7689862	11.6544097	40.7182237	0.80498933	10.8452074
9.32997078	10.3651363	2.08520462	38.9393358	4.46933809	12.4642193
39.3338389	11.217711	5.69256117	31.6075401	42.7598479	52.5970485
40.1151652	22.7171249	48.0010902	6.09806287	11.329923	77.9696608
12.4790319	8.81633673	32.6371244	17.4286541	25.8123925	2.45800921

# Highlights

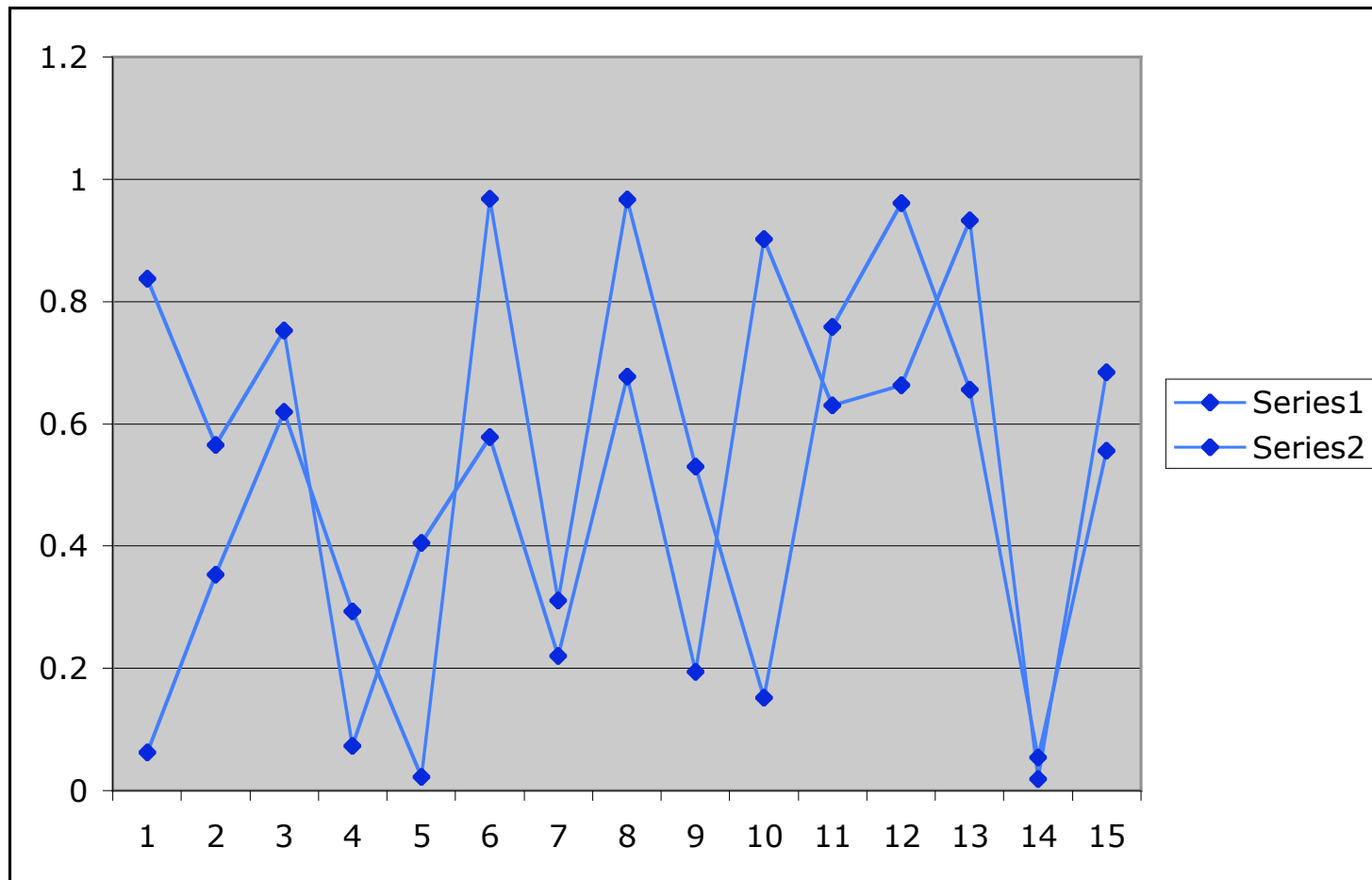
- Highlighting your results makes it easier to be impressed
- Often, graphs are your best option

	Them	Other	Us	I	Before	After
	58.196724	1.92002739	1.53751713	29.5976041	2.46421295	3.17727204
	70.6175489	3.00591136	7.69384011	62.8562662	19.5241785	31.3642632
	23.8275239	11.626352	12.0111835	21.0181235	24.5662656	19.7383832
	<b>13.122406</b>	<b>67.5818788</b>	<b>33.5137962</b>	<b>12.4149462</b>	<b>5.7323114</b>	<b>21.8612581</b>
	25.0924127	9.92867192	16.3807439	34.1047403	0.10031402	27.8885012
	30.5204121	55.1855671	3.99619025	35.1768939	6.08850708	14.1836612
	72.0968369	4.20583085	67.1600911	15.553699	9.23924564	25.3303984
	49.2438418	2.84775526	0.0371892	12.5360887	27.5661737	38.4228351
	3.90222835	2.26743183	1.04553561	10.8277442	23.3989375	1.60091797
	6.05512336	7.39369921	6.12342677	15.7853109	0.30466234	46.5812807
	2.2139941	1.8137451	15.4327741	33.8094697	37.3670813	27.371263
	18.6314393	6.84004311	40.2721326	20.8370082	23.3737933	17.2852474
	3.12728686	54.6055936	27.6349899	20.2904602	25.1715625	9.16763145
	4.24401787	27.5407873	33.0976974	23.944946	13.6636932	34.6187036
	10.5131433	14.963855	30.4335269	16.4182357	47.6742919	9.80247257
	21.5147913	39.1795714	13.5760929	33.4474783	4.24569547	13.3165599
	5.11138625	3.49096072	49.8377464	1.34306767	10.1822294	7.56930288
	56.2348014	59.2211033	57.1242662	4.38467946	56.1990825	9.69954722
	41.0646223	17.089566	0.81674391	58.4329344	61.4435874	15.0637714
	<b>3.23650817</b>	<b>18.65703</b>	<b>60.0265172</b>	<b>50.914352</b>	<b>65.1234191</b>	<b>14.7580237</b>
	42.772996	17.5764372	73.2702617	0.37126317	30.2288063	61.4673035
	51.5099336	4.04700834	5.00795955	35.0007665	64.4265914	34.2280208
	25.8968394	0.02913545	38.4477841	36.6823595	25.8103733	70.0261776
	39.7807354	35.7948062	3.02952063	64.257243	5.93233119	4.44930214
	9.28083478	40.7503238	2.0192065	21.7365769	34.0209085	4.73403966
	40.0607415	37.0791777	20.820208	0.54501878	14.7347336	0.44265237
	47.9023776	41.0481934	11.3523791	17.0157855	33.6909099	29.7239863
	4.36409202	23.1865219	29.2919699	2.202943	14.7994288	4.50076883
	12.6337109	40.4767489	8.25438514	16.9609122	5.38867507	23.154421
	17.3206238	7.39357592	66.532393	4.02339615	34.1870781	79.4368245
	4.96285045	0.13373334	25.6853262	34.0939508	54.2528556	2.61935354
	23.5221809	13.6901371	5.54308274	0.78162253	7.65545283	40.9663881
	2.76947617	18.0318636	10.2308118	26.6964051	10.8893083	73.659904
	62.5784199	45.6252101	32.3404227	22.5773379	21.8935899	50.555963
	6.36593733	12.073007	49.3338859	35.8450393	51.4840579	3.21274552
	16.9911371	3.07952636	11.3247178	43.3672456	75.2594966	6.04850166
	24.9665649	0.92379575	58.6321224	1.19400588	3.54769092	16.803247
	5.08353392	27.0772659	0.69555404	67.006539	0.96251877	4.54337429
	34.7695403	20.846281	14.0607432	2.44235265	0.74203596	12.4017077

# Information Overload

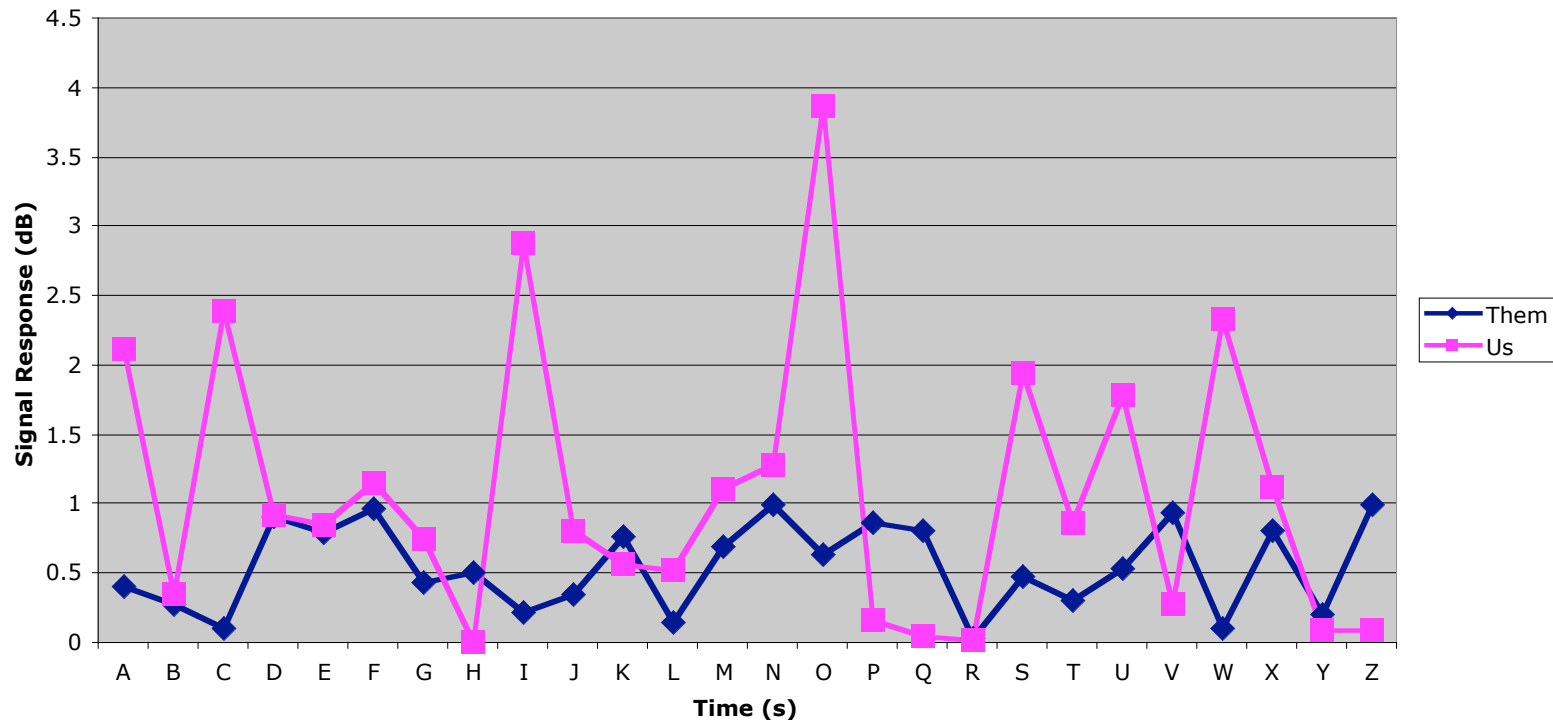


# Pick a Line, Any Line



# Simplify Your Life

Performance



- Give us the “big picture”
- Thicker lines
- Speak the axis labels and legend

# Ummm...That's All I Have

- You've come this far, go the distance!
- Don't just fizzle out in the end
- SUMMARIZE! Give us the big finish!
- **30x speedup / 10% area penalty**

# Conclusion

- A little prep goes a long way
- Your audience:
  - Is smarter than you think
  - Gets bored easily
  - Will ask questions
  - Deserves your best effort
- Make it easy for them to understand your work!