Genentech
IN BUSINESS FOR LIFE

CITY COLLEGE OF SAN FRANCISCO

JS Hongo Consulting, Inc.

Jo-Anne S. Hongo

Genentech (1985 - 2014)

JS Hongo Consulting, Inc. (2014 - Present)

City College of San Francisco (1995 – Present)

Needed Math Conference

2018 January 12-14, Baltimore

Michael Hacker, Ph.D. & Paul Horwitz, Ph.D.

Employers were asked to provide insight to what's required of entry level technicians

1. Examples of responsibilities requiring math reasoning and calculations
2. Technical problems that technicians encounter on a regular basis
3. Examples of "real" calculations that technicians perform on a regular basis
4. Overall math preparedness of our entry level employees
5. What would we like to see (or see more of) as employers?

Employers are faced with similar challenges and have similar needs

1. More emphasis on modeling, statistics and understanding graphs.

2. Promote and encourage thinking “beyond the equation”.

1. More use of authentic contextual examples.

Former biotech students agree with contextual learning needs

- "Just having a degree does not prepare you well for math used at work (3/10)…classes that taught us about dilutions and those calculations were key for me" *DNA Sequencing*
- "Most entry level employees we have are well prepared (9/10)…we do have SOPs that we always need to refer to… they have to deal with a lot of dilutions" *Manufacturing*
- "Most individuals are well prepared regarding math (8/10)…there's a great deal of work involving dilutions" *Assays & Automation*

Vision, thoughts, questions for the future

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- How can *we* increase the contextual relevance of math education?
- How can *we* be more inclusive?
- Would a "business model" approach be effective?
- How can *we* minimize "imposter syndrome"?