<H1>LATEX INFO</H1>

In new Jupyter notebooks I have been working you can just type latex in markdown cells and it works.

Example of new way on next line, but won't work in old canopy I have on home computer. (kept old one so far because lets me edit directly in cnaopy whereas new Canopy goes to browser and is a bit annoying in opening and closing.) To see it work, easiest way is to upload to tmpnb.org and use there.

$$\begin{aligned}
\nabla \times \vec{\mathbf{B}} -\, \frac1c\, \frac{\partial\vec{\mathbf{E}}}{\partial t} & = \frac{4\pi}{c}\vec{\mathbf{j}} \\
\nabla \cdot \vec{\mathbf{E}} & = 4 \pi \rho \\
\nabla \times \vec{\mathbf{E}}\, +\, \frac1c\, \frac{\partial\vec{\mathbf{B}}}{\partial t} & = \vec{\mathbf{0}} \\
\nabla \cdot \vec{\mathbf{B}} & = 0
\end{aligned}$$

Easy Equation writing examples $c = \sqrt{a^2 + b^2}$ Logarithmic growth of a population of cells can be described mathematically as $N = N_o e^l n2(t/t_2)$ (from page 177 of Methods in Yeast Genetics, 205 Edition) **See here for an awesome reference for MathJax**

"and use single $ (rather than double $$) to keep the equation in-line. stackoverflow.com/q/19412644/1224255" - from http://stackoverflow.com/questions/13208286/how-to-write-latex-in-ipython-notebook (<---this itself was tricky to write and I had to use minrk's April 18th answer at https://github.com/ipython/ipython/issues/3197/ as a basis

Based on here I figured out (probably again) how to add hyphen when in math mode in Jupyter notebooks and not have it loolike a minus sign. $\frac{mito\ purification\ RNA\text{-}Seq\ data}{total\ cell\ RNA\text{-}seq\ data}$ VS. $\frac{obs_a - obs_b}{exp_a - exp_b}$

[15]:
```
#from JupyterLab demo notebook November 2, 2016
from IPython.display import Latex
Latex('''The mass-energy equivalence is described by the famous equation

$$E=mc^2$$

discovered in 1905 by Albert Einstein.
In natural units ($c$ = 1), the formula expresses the identity

\\begin{equation}
E=m
\\end{equation}''')
```

```
<IPython.core.display.Latex object>
```

[3]:
```
%%latex
\begin{aligned}
\nabla \times \vec{\mathbf{B}} -\, \frac1c\, \frac{\partial\vec{\mathbf{E}}}
{\partial t} & = \frac{4\pi}{c}\vec{\mathbf{j}} \\
\nabla \cdot \vec{\mathbf{E}} & = 4 \pi \rho \\
\nabla \times \vec{\mathbf{E}}\, +\, \frac1c\, \frac{\partial\vec{\mathbf{B}}}
{\partial t} & = \vec{\mathbf{0}} \\
\nabla \cdot \vec{\mathbf{B}} & = 0
\end{aligned}
```

```
<IPython.core.display.Latex object>
```

[11]:
```
%%latex

$$
\frac{1}{3}\
$$

$$
\frac{obs}{expe}\
$$

$$ Ai(z) =
  \frac13\sqrt{z}\left[
  I_{-1/3}(\zeta)
  -I_{1/3}(\zeta) \right]
  =
  \pi^{-1}\sqrt{z/3}K_{1/3}(\zeta)
$$

{\bf 10.4.15}
$$ Ai(-z) =
  \frac13\sqrt{z}
  \left[
  J_{1/3}(\zeta) +
  J_{-1/3}(\zeta) \right]
  =
  \frac12 \sqrt{z/3} \left[
  e^{\pi i/6} H_{1/3}^{(1)}(\zeta)
  + e^{-\pi i/6}H_{1/3}^{(2)}(\zeta)
  \right]
$$
```

```
<IPython.core.display.Latex object>
```