LATEX INFO

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.

$$\nabla \times \vec{\boldsymbol{B}} - \frac{1}{c}\frac{\partial \vec{\boldsymbol{E}}}{\partial t} = \frac{4\pi}{c}\vec{\boldsymbol{j}}$$

$$\nabla \cdot \vec{\boldsymbol{E}} = 4\pi\rho$$

$$\nabla \times \vec{\boldsymbol{E}} + \frac{1}{c}\frac{\partial \vec{\boldsymbol{B}}}{\partial t} = \vec{\mathbf{0}}$$

$$\nabla \cdot \vec{\boldsymbol{B}} = 0$$

Easy Equation writing examples

$$c = \sqrt{a^2 + b^2}$$

Logarithmic growth of a population of cells can be described mathematically as

$$N = N_o e^{ln2(t/t_2)}$$

(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.

$$\frac{mito\ purification\ RNA\textrm-Seq\ data}{total\ cell\ RNA\textrm-seq\ data}$$

VS.

$$\frac{obs_a - obs_b}{exp_a - exp_b}$$

```
#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>

```
%%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>

```
%%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>