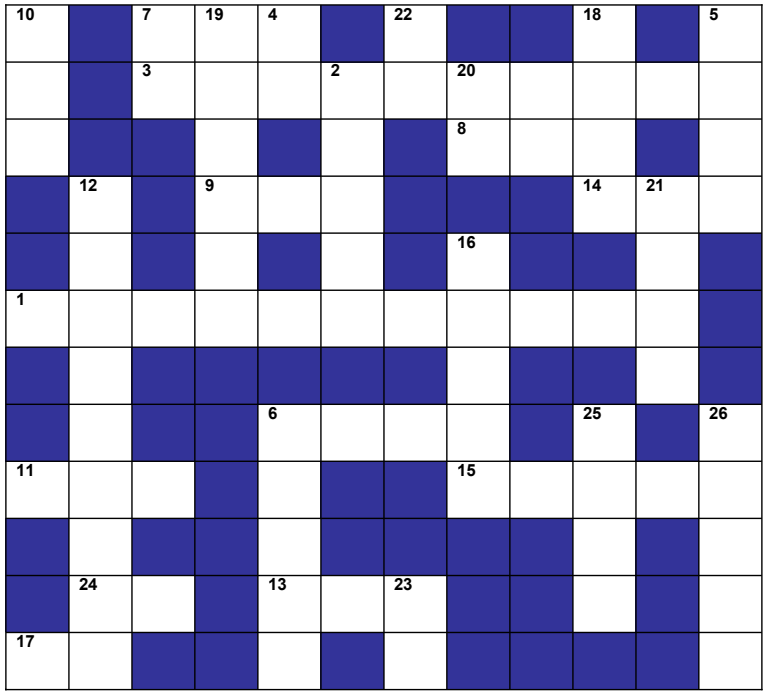
Fluorescent Protein Crossword Puzzle



Clues to the Fluorescent Protein Crossword Puzzle:

1 across: In this lab, we will learn different flow cytometric strategies to simultaneously analyze multiple ____ proteins (FPs). FPs have been successfully utilized as genetic reporters for monitoring gene transfer and expression.

2 down & 3 across: Hardware circuitry on flow cytometers performs real time ____ subtraction to ____ for spectral overlap among parameters. Alternatively, software can be used post-acquisition to perform algebraic matrix operations.

4 down: Measure to enhance performance of the hardware. (Hint: a type of maintenance.)

5 down & 6 down: Measure to counter software woes… "Who you gonna call – Bugbusters!" If you need ____, ask ____. (Hint: he is the Course Director of the 29th Annual Flow Cytometry Course held at Bowdoin College, Brunswick, Maine.)

7 across: A simple way to exchange data files between computers on a network, such as the Internet.

8 across: A wizard for displaying transformed data on Iso3D plots. (Hint: he is the Technical Support Manager at Verity Software House.)

9 across & 10 down: SO, let ____ of us have a ____-filled week here at the 29th Annual Flow Cytometry Course!!!

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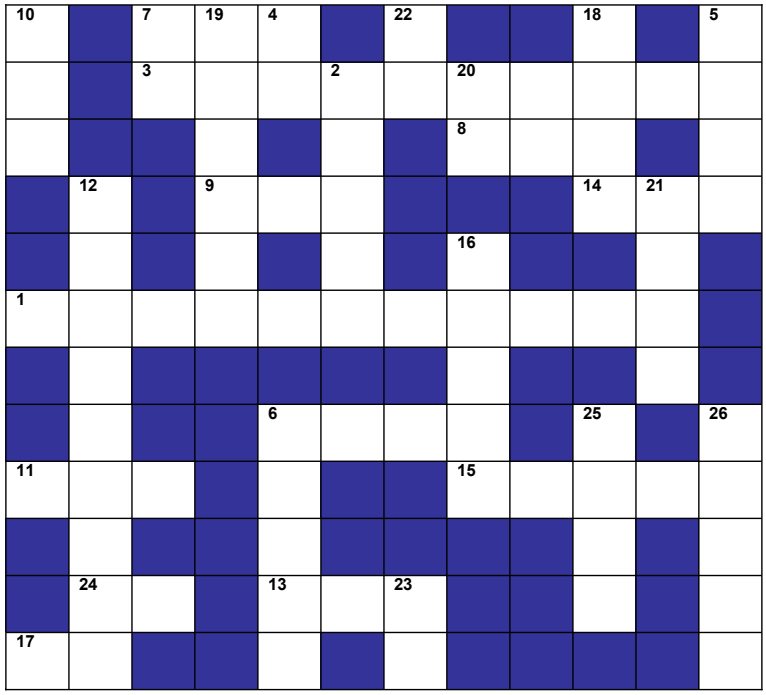

Clues to the Fluorescent Protein Crossword Puzzle (continued):

11 across & 12 down: The first representative of FP reporters was the ____, cloned from the bioluminescent ____, *Aequorea victoria*. Its enhanced variant is excitable with 458 or 488 nm.

13 across: A blue-shifted FP variant; excitable with 407, 413 or 458 nm.

14 across: A red-shifted FP variant; excitable with 458, 488 or 514 nm.

15 across: A tetrameric red FP discovered in 1999 from the reef coral, *Discosoma* sp.; excitable with 488, 514, 531 or 568 nm.

16 down: An engineered dimeric far-red FP derived from a chromoprotein originally isolated from *Heteractis crispa*; excitable with 568 or 633 (suboptimal) nm.

17 across: Some of the limitations of the early generation of FPs include sensitivity to low ____ (hint: acidic environment), photobleaching, aggregate formation, and slow or incomplete maturation.

18 down: ____ improved FP variants are now available.

19 down: A dimeric FP variant developed in Dr. Roger Tsien's lab; possibly a good substitute for the tetrameric red FP discovered in *Discosoma* sp.

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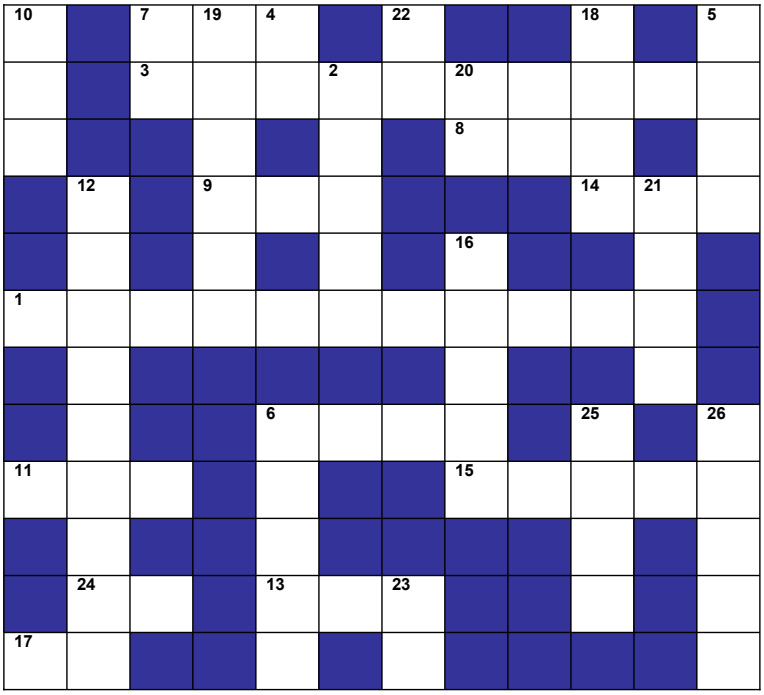

Clues to the Fluorescent Protein Crossword Puzzle (continued):

20 down: A filter that can be installed in front of the forward scatter detector to accommodate different sizes of cells or particles being analyzed on the flow cytometer.

6 across: Cascade ____ is compatible for use with the cyan FP.

21 down: Fluorochrome incompatible for use with the green FP.

22 down: Fluorochrome compatible for use with the green FP.

23 down: Dye compatible for use with the green FP for DNA content or cell cycle studies (but DRAQ5 is a better choice).

24 across: Red- or far-red-emitting fluorochromes are compatible for use with the major FP variants. Fluorochrome-conjugated ____ used in conjunction with biotinylated antibody provides the versatility in designing detection strategies.

7 down: Receptors expressed on certain cell types; they non-specifically bind some classes of antibodies, increasing background signals in the detection of cell surface antigens.

25 down: Spectral overlap between FPs makes some of them good partners in the study of protein-protein interactions using a technique known as ____.

26 down: Nanocrystals that hold a lot of promise as tools to complement FP technology.