**VIDEO GUIDE FOR BOZEMAN BIOLOGY SIGNAL TRANSDUCTION PATHWAYS**

1. How are signal transduction pathways like the musical genius of Jimi Hendrix?
2. Signal transduction pathways usually modify \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or trigger phosphorylation \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. When a signal binds to a receptor, it changes its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Epinephrine (the messenger involved in the fight or flight response) binds to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ receptor. Epinephrine is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. When epinephrine binds to the G-protein, its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes and it releases a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which binds to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. When the alpha subunit from the G-protein binds to adenyl cyclase, it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. The function of adenyl cyclase is to produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from ATP.
8. Cyclic AMP binds to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ portions of protein kinase, releasing the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ portions.
9. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-ated catalytic portions can now act upon other enzymes in the cell.
10. In review:
    1. Epinephrine is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_
    2. Its receptor is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    3. When epinephrine binds to the G-protein, its releases a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    4. This subunit binds to \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    5. Adenyl cyclase converts ATP to \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \*\*
    6. cAMP causes the protein kinase to releases its \_\_\_\_\_\_\_\_\_\_ portions
    7. the catalytic portions become \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    8. these can act upon \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that breakdown glycogen into \_\_\_\_\_\_\_\_
11. How is cAMP like Jimi Hendrix’s amplifier?