1. Why are Mr. and Mrs. Williams consulting a genetic counselor?

2. What does the abnormal hemoglobin in sickle cell anemia do that normal hemoglobin does not?

3. Why were Mr. and Mrs. Williams right to be concerned about their future children?

4. Proteins are made up of ___________ acids. There are only _______ of these acids that combine to form all the proteins in your body.

5. In sickle cell anemia, which chromosome has a mutation, or error in the code?

6. In the sickle cell hemoglobin molecule, how many amino acids are different when compared to a normal hemoglobin molecule?

Check the appropriate box below to indicate where these bonds will be when a typical protein folds:

<table>
<thead>
<tr>
<th>Type of Bond</th>
<th>Outside</th>
<th>Inside</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Hydrogen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Hydrophobic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Salt Bridge (charge to charge)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. The job of the genetic counselor in a situation like this is to:
Questions Related to the Career Interviews:

Matt Pastore

1. Being a genetic counselor primarily combines what two fields?

2. What are three aspects of Matt Pastore’s job that he really likes?

3. How has the field improved in the past 10 years?

Andre Palmer

1. What are the advantages to having a red blood cell substitute available compared to just using donated human blood?

2. Why can’t you just take normal hemoglobin and add it to someone’s blood to help them recover from an injury or a disease?

3. What is the ultimate goal of using hemoglobin nanoparticles for sickle cell anemia patients?