



**Department of Biological Sciences**

**Learn to make  
a question**

AM

5:45









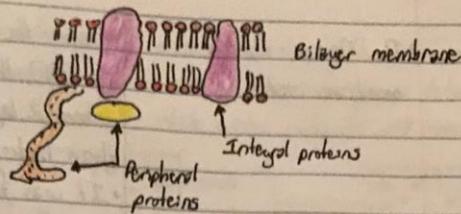
**Work? Keep it below 17 hours**

**Sleep? Make it a priority**

**School? 3X hours**

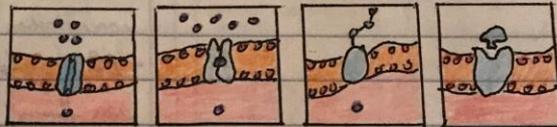
**15 credits: 15 hours + 2 X 15 = 45 hours**

**(rewrite your notes)**

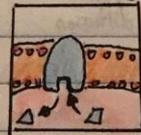


### • Protein functions

- ① channels - allow passive transport between the inside + outside of cell
- ② carriers - bind to substance on one side of membrane then changes shape to transport it to the other side
- ③ recognition - differentiate between self + non-self cells (important in triggering an immune response)
- ④ receptors - relay information from the inside + outside of the cell
- ⑤ enzymatic - enhance the rate of reactions that happen at the membrane level



channel      carrier      recognition      receptor



enzymatic

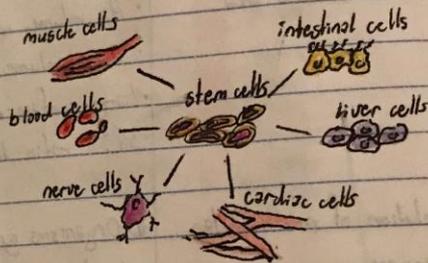
### • Cholesterol

- An amphiphilic molecule made up of a non-polar part comprising of 4 ring structures + a hydrocarbon tail + a polar hydroxyl group.
- Plays an important role in controlling membrane fluidity + permeability to some solutes.

Types of stem cells

- ① Totipotent stem cell - can differentiate into any type of cell & give rise to a complete organism
- ② Pluripotent stem cell - can differentiate into all body cells but cannot make a complete organism
- ③ Multipotent stem cell - can differentiate into a few closely-related types of body cells
- ④ Unipotent stem cell - can only differentiate into their associated cell type

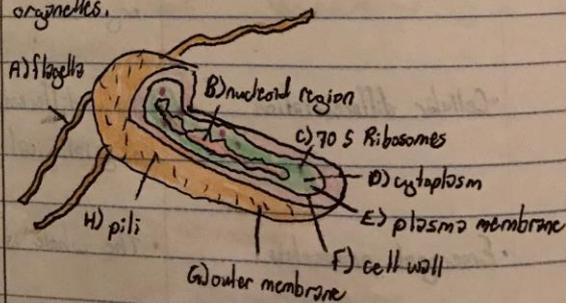
Human stem cell applications



**I** Ultrastructure of Cells

Prokaryotes

Simple unicellular organisms with no internal compartmentalization, no nucleus, & no membrane-bound organelles.



- A) responsible for movement of organism
- B) controls all activities of the cell
- C) site of protein synthesis
- D) medium that fills up the cell

**Know the curriculum**

**Know the website**

**Get involved and take charge  
of your curriculum:**

**Your advisor, SE 101 and beyond**

**Get involved, DOA and BUGS**

**Read emails from Ed Nelson!!!**

**Consider undergraduate research**

1. When you send an email to the department always use your Southeastern email account. Please write the email in complete sentences, i.e. "Good morning. My name is \_\_\_\_\_, etc." Always address any faculty you email as "Dr. \_\_\_\_\_". Always include your w#. Don't write an email as if you were texting a friend.  
(NOTE: When emailing to get a class permission, besides providing your w#, always provide the class and specific section number. The section number is the number after the course name, i.e., GBIO 151-01, MIC 205-02, etc.)
2. When telephoning the department for a class permission, know the section number of the class, before you dial. You can't expect the person answering the phone to stay on hold with you while you look up the section # on your phone.
3. Take Library Science when you're a freshman or a sophomore at the latest. This class is taught every semester, many sections, with many online sections. If you wait until you're a graduating senior you run the risk of not getting in a section and having to take a credit exam which costs you more money (\$25), and if you don't pass the credit exam, it will delay your graduation.
4. Apply for graduation early. If you apply for graduation two semesters ahead of time – it is free. If you wait until the semester you're graduating it will cost you \$25. This also allows us to check your degree audit (progress) and see what courses you need to fulfill graduation requirements and if substitutions needs to be made.
5. Do in person advising when at all possible. Face to face is always the best way to get advised, and for your advisor to get to know you.
6. Get advised several weeks prior to Priority Registration week. Waiting until Priority Registration week or after can result in you not being able to schedule the classes you need. Also make sure before you get advised that you don't have a hold from the Controller's office – unpaid parking tickets, etc. will prevent you from being able to schedule parking tickets.
7. Take your math classes when you're a freshman or sophomore. Since so many students struggle with math, it's always best to take your Math classes when college algebra/calculus, etc. is still fresh in your mind from high school.
8. Come to the monthly Biology seminars!
9. Join BUGS and/or DOA – get involved with other Biology majors and campus activities.
10. Come by the department or call us when you have a question and we'll be glad to help you!

1. When you send an email to the department always use your Southeastern email account. Please write the email in complete sentences, i.e. "Good morning. My name is \_\_\_\_\_, etc. " Always address any faculty you email as "Dr. \_\_\_\_\_". Always include your w#. Don't write an email as if you were texting a friend.

(NOTE: When emailing to get a class permission, besides providing your w#, always provide the class and specific section number. The section number is the number after the course name, i.e., GBIO 151-01, MIC 205-02, etc.

2. When telephoning the department for a class permission, know the section number of the class, before you dial. You can't expect the person answering the phone to stay on hold with you while you look up the section # on your phone.

3. Take Library Science when you're a freshman or a sophomore at the latest. This class is taught every semester, many sections, with many online sections. If you wait until you're a graduating senior you run the risk of not getting in a section and having to take a credit exam which costs you more money (\$25), and if you don't pass the credit exam, it will delay your graduation.

4. Apply for graduation early. If you apply for graduation two semesters ahead of time – it

3. Take Library Science when you're a freshman or a sophomore at the latest. This class is taught every semester, many sections, with many online sections. If you wait until you're a graduating senior you run the risk of not getting in a section and having to take a credit exam which costs you more money (\$25), and if you don't pass the credit exam, it will delay your graduation.
4. Apply for graduation early. If you apply for graduation two semesters ahead of time – it is free. If you wait until the semester you're graduating it will cost you \$25. This also allows us to check your degree audit (progress) and see what courses you need to fulfill graduation requirements and if substitutions needs to be made.
5. Do in person advising when at all possible. Face to face is always the best way to get advised, and for your advisor to get to know you.
6. Get advised several weeks prior to Priority Registration week. Waiting until Priority Registration week or after can result in you not being able to schedule the classes you need. Also make sure before you get advised that you don't have a hold from the Controller's office – unpaid parking tickets, etc. will prevent you from being able to schedule parking tickets.
7. Take your math classes when you're a freshman or sophomore. Since so many students struggle with math, it's always best to take your Math classes when college algebra/calculus, etc. is still fresh in your mind from high school.

**Keep sane:  
Health and life**

**Do the math and organize:  
Sanity, work, sleep, school**

**See your professors!**

