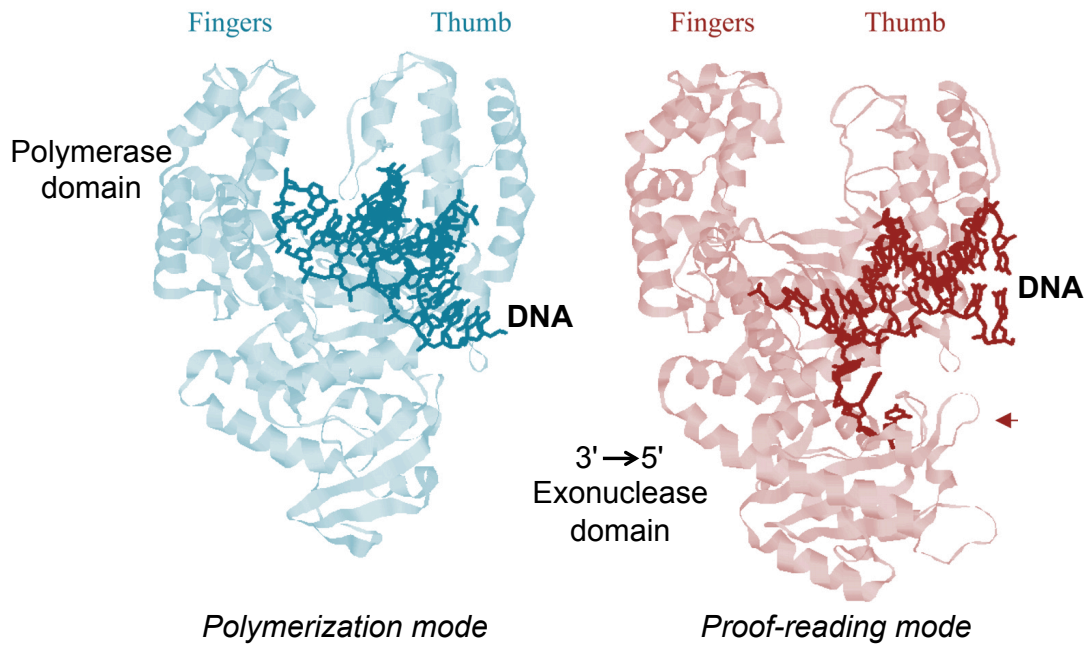




# MCB 110

**"Molecular Biology: Macromolecular  
Synthesis and Cellular Function"**

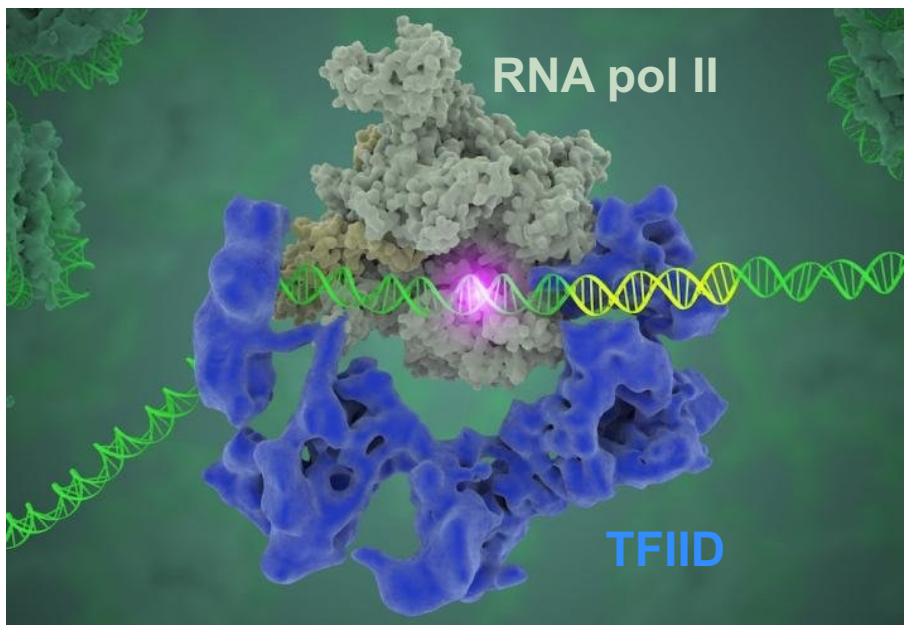
## *Escherichia coli* DNA polymerase I [Klenow fragment]



# MCB 110 - Part I

Week	Day	Date	Topic	Reading*
1	W	01/19	Nucleic acid chemistry & protein-DNA recognition	Ch2
	F	01/21	Chromosomes: packaging & topological constraints	Ch4
2	M	01/24	DNA replication: DNA polymerases	Ch6
	W	01/26	DNA replication: Unwinding, protection and priming	Ch6
	F	01/28	Replication factors: Processivity, progression and Ligation	Ch6
3	M	01/31	DNA replication: origin, initiation, regulation	Ch6
	W	02/02	Telomeres and Telomerases	Ch5 &Ch6
	F	02/04	Damages and Repairs I	Ch15
4	M	02/07	Damages and Repairs II	Ch15
	W	02/09	DNA end joining, homologous repair and recombination	Ch16
	F	02/10	Motile DNA and specific recombination	Ch17
	M	02/14	Molecular biology and DNA engineering I	Ch19
5	W	02/15	Molecular biology and DNA engineering II	Ch19
	F	02/18	Review	
	M	02/21	<b>No Class</b> Labor Day	
6	T	02/22	<b>Exam 10 Evans 7-9pm</b>	Good Luck

\*All assigned reading is in Craig NL *et al.* (2014)  
*Molecular Biology: Principles of Gene Function*, 2<sup>nd</sup> Edition

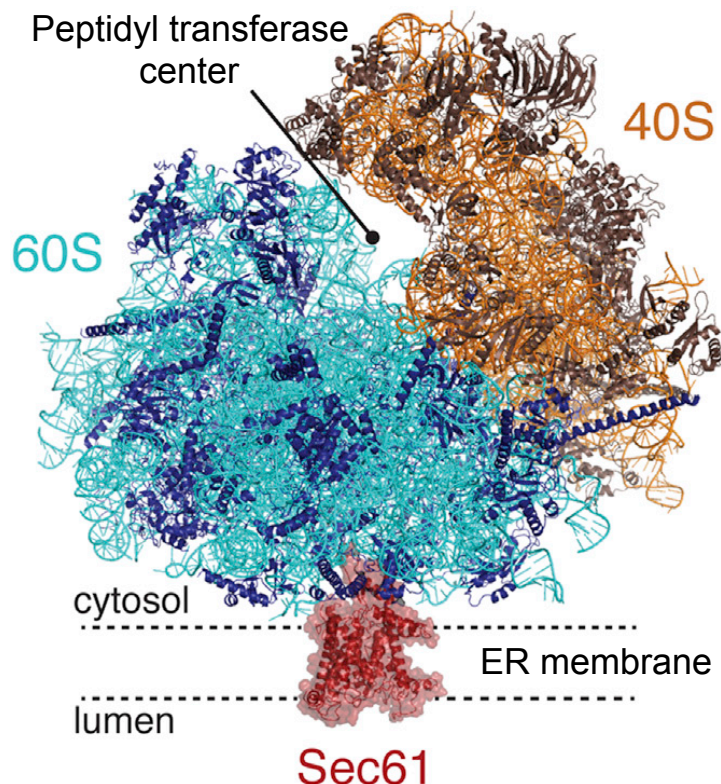


## MCB 110 - Part II

Week	Day	Date	Topic	Reading*
6	W	02/23	Prokaryotic transcription: promoters & RNA polymerase	Ch 8: p296-327
	F	02/25	Regulation of transcription in prokaryotes	Ch 9: p340-5; 352-5
7	M	02/28	Eukaryotic transcription apparatus & methods for analyzing individual and global gene transcription, Part I	Ch 8: p296-327
	W	03/02	Eukaryotic transcription apparatus & methods for analyzing individual and global gene transcription, Part II	Ch 8: p296-327
	F	03/04	Regulation of transcription in eukaryotes: chromatin & its impact on transcription, Part I	Ch 9: p330-40
8	M	03/07	Regulation of transcription in eukaryotes: chromatin & its impact on transcription, Part II	Ch 9: p330-40
	W	03/09	Regulation of transcription in eukaryotes: polymerase pausing & elongation	Ch 8: p319-23
	F	03/11	Regulation of transcription in eukaryotes: interpreting & integrating upstream signals	Ch 9: p360-5
9	M	03/14	mRNA processing: capping & polyadenylation	Ch10: p385-8
	W	03/16	mRNA processing: mechanism & control of splicing, Part I	Ch10: p388-405
	F	03/18	mRNA processing: mechanism & control of splicing, Part II	Ch10: p388-405
10	M-F		<b>No class</b> (Spring Break Week, M 03/21 — F 03/25)	—
11	M	03/28	RNA interference & RNA degradation, Part I	Ch10: p410-5
	W	03/30	RNA interference & RNA degradation, Part II	Ch10: p410-5
	Th	03/31	<b>EXAM #2 – 2040 &amp; 2060 VLBS</b>	Good luck!

\*Reading is in Craig NL *et al.* (2014) *Molecular Biology: Principles of Gene Function*, 2nd Ed.

## Mammalian Ribosome-Translocon Complex



## MCB 110 - Part III

Week	Day	Date	Topic	Reading
11	F	04/01	The genetic code	Craig: 421-430
12	M	04/04	Translation I	Craig: 431-438
	W	04/06	Translation II	Craig: 440-442, 444-445, 448-450
	F	04/08	Translation III	Craig: 450-459
13	M	04/11	Translation Regulation	Craig: 487-489, 492-495
	W	04/13	Protein folding	Craig: 539-543
	F	04/15	Post-translational modifications	Craig: 560-563, 565-567
14	M	04/18	Protein degradation: Ubiquitination & the proteasome	Craig: 572-573, 576-581
	W	04/20	Targeting to organelles	Alberts: 641-643, 647-655, 658-664
	F	04/22	Secretion and the ER	Alberts: 669-677
15	M	04/25	From ER to Golgi	Alberts: 708-711
	W	04/27	Exocytosis & Endocytosis	Alberts 695-702
	F	04/29	Endosomes and Lysosomes	Alberts: 722-728, 732-737
16	M-F		<b>No class</b> (RRR Week; M 05/02— F 05/06)	
Finals	<b>Tu</b>	05/11	<b>EXAM #3 - TBD</b>	Good luck!

\*Craig: Craig NL et al. (2014) Molecular Biology: Principles of Gene Function, 2<sup>nd</sup> Ed.  
 Alberts: Alberts et al. (2015) The Molecular Biology of the Cell, 6th Ed. (reader)

# SUMMARY OF EXAM DATES & TIMES

## EXAM #1 :

DATE: Feb 22; TIME: 7 to 9 PM;  
Location": 10 EVANS

## EXAM #2 :

DATE: March 31; TIME: 7 to 9 PM;  
Location: 2040 & 2060 VLSB

## EXAM #3 :

DATE, TIME  
TBA

*Any DSP student will be notified individually about her / his accommodation.*



## Basis of Assessing Student Performance in MCB 110

Three Exams (100 points each) =	300 pts.
Five (out of Six) Quizzes (6 points each) =	30 pts.
Disc. Session Attendance & Participation =	3 pts.
<hr/> TOTAL =	<hr/> 333 pts.