

Welcome to Macro Methods!

<http://fraserlab.com/methods/>

Macro Methods Team



John



Aashish



Dan



Jaime



Jenna



Kyle



Ryan



Saulo



Mike



Daniel

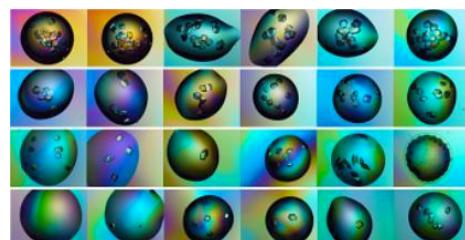
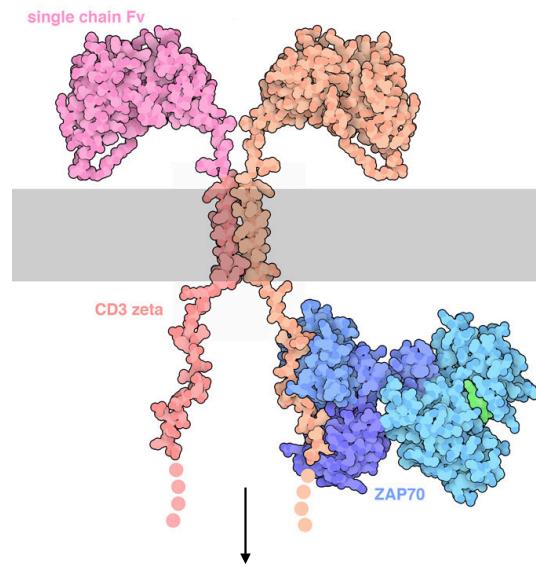
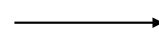
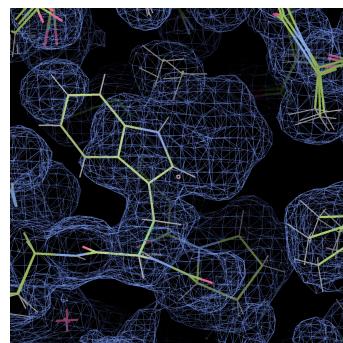
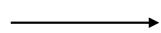
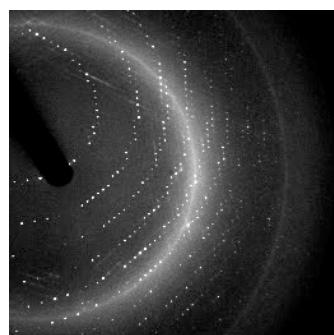


Eugene

Plus lectures from:
Bob Stroud,
Andrej Sali, Tom Goddard,
and Yifan Cheng!

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The problem: understand the black boxes for NMR, X-ray, EM



ATOM	1	N	VAL	A	2	-19.742	-2.254	-19.976	1.00	54.44
ATOM	2	CA	VAL	A	2	-19.867	-2.152	-18.529	1.00	54.48
ATOM	3	C	VAL	A	2	-19.073	-0.927	-18.101	1.00	41.86
ATOM	4	O	VAL	A	2	-19.367	0.178	-18.554	1.00	47.57
ATOM	5	CB	VAL	A	2	-19.341	-3.411	-17.836	1.00	68.76

N
C
C
O
C

Structure of Macro Methods

- **Data collection
(hands on) - weeks 1-2**

- **X-ray:** Julian Braxton, Matthew Callahan, Elissa Fink, Nicholas Hoppe, Matthew Klope, Aji Palar, Sarah Williams
- **NMR Group A:** Maru Garza, Jasmine King, Letitia Sarah, Jack Strickland; **Group B:** Katarina Pance, Christina Stephens, Arthur Tran
- **EM:** **Group A:** Daniel Barrero, Dyana Kenanova, Hayarpi Torosyan, Lawrence Zhu; **Group B:** Quinn Edmonson, Bryan Faust, Holly Vickery

Methods Presentations: 12 minutes each

EM: Hayarpi Torosyan and Bryan Faust

X-ray: Elissa Fink and Matthew Kloppe

NMR: Jasmine King and Arthur Tran

- **Analysis
(lectures and data processing tutorials) - weeks 3-6**

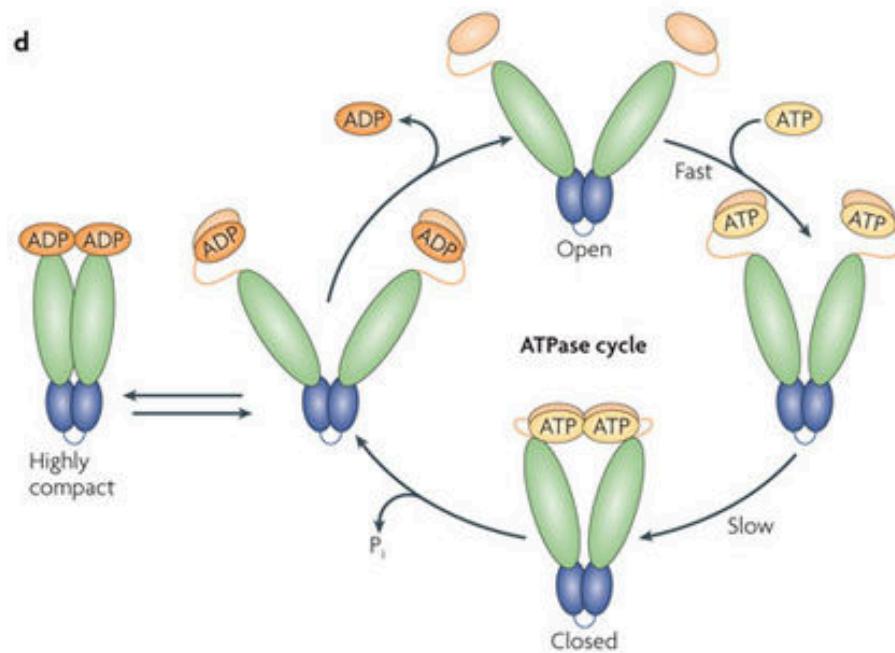
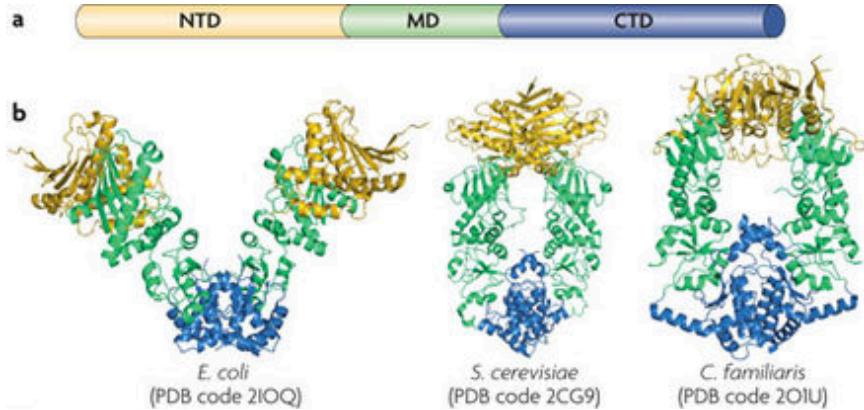
1. Quinn Edmonson, Nicholas Hoppe, Christina Stephens, Lawrence Zhu
2. Elissa Fink, Katerina Pance, Arthur Tran, Holly Vickery
3. Bryan Faust, Maru Garza, Dyana Kenanova, Sarah Williams
4. Matthew Klope, Aji Palar, Letitia Sarah, Hayarpi Torosyan
5. Daniel Barrero, Julian Braxton, Matthew Callahan, Jasmine King, Jack Strickland

Journal Club Presentations: 6 min/3 slides

FINAL PRESENTATIONS

- **Monday December 17th**
- 20 minutes per group
+ 5-10 min questions
- Presenting to JG,AM,DS, TAs,
and one external examiner
(e.g. Agard, Stroud, Cheng, Fraser)

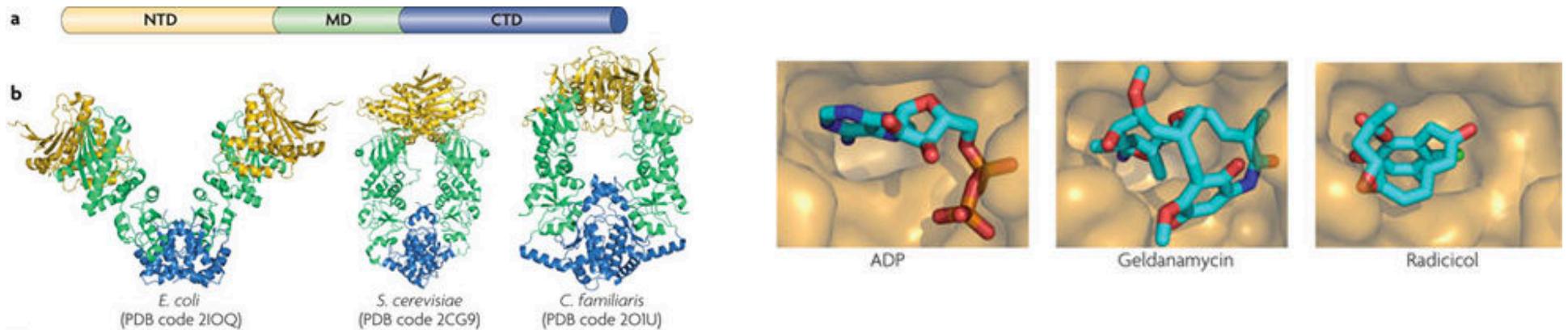
HSP90 is a multidomain protein



Nature Reviews | Molecular Cell Biology

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The N-terminus of HSP90 is “druggable”



- What did you find with each method? How did you get to your results? How did you assess the confidence in your results?
- What is the agreement between different methods?
- What can we learn about driving forces and kinetics of small molecule binding and the HSP90 functional cycle?
- How do we integrate different methods to emphasize strengths and overcome weaknesses?

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