



Help me learn?

Sure!

# Peer Assisted Learning (PAL) Sessions in BIOL 207

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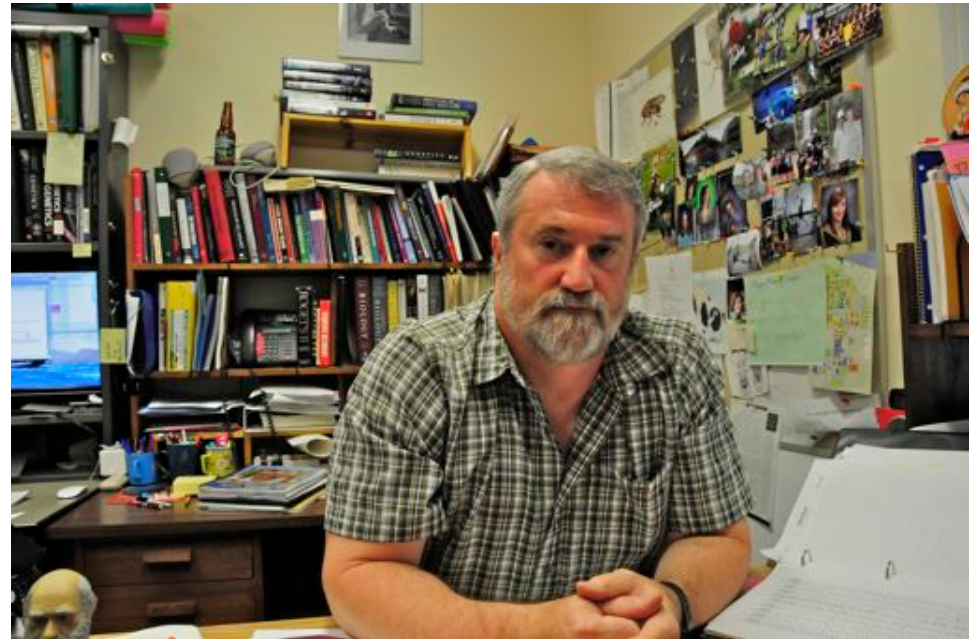
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# Overview of presentation

- Who am I?
- What is Biol 207?
- What learning problems do Biol 207 students have?
- What is Peer Assisted Learning (PAL)?
- What does a PAL session entail?
- Does it help student learning?

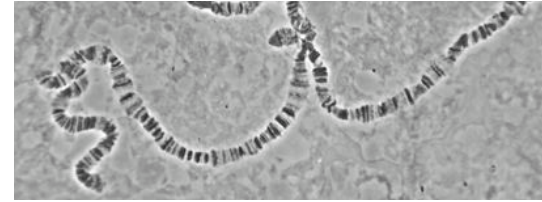


# Who am I?

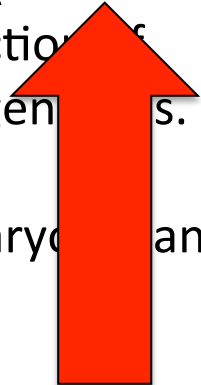


- Dr. John Locke
- Instructor for BIOL 207,  
taught this course for 15+ years
- Also teach:
  - 3<sup>rd</sup> year “Molecular Genetics Techniques” course
  - 4<sup>th</sup> year “Ethical Issues in Genetics” course

# What is BIOL 207?



- **MOLECULAR GENETICS AND HEREDITY \*3 (3-1s-3)**
- The chromosomal and molecular basis for the transmission and function of genes. The construction of genetic and physical maps of genes and genomes. Strategies for the isolation of specific genes. Examples of regulatory mechanisms for the expression of the genetic material in both prokaryotes and eukaryotes.
- Required course in Biology General, Specialization and Honours programs
- Four Sections, ~200-300 student, mostly 2<sup>nd</sup> year, some 1<sup>st</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> year students.
- Lab component 35%, 2 midterm 1 final exam



# Problems student have....

- **1 - Lack of knowledge**
  - Solve with a text book/website/lecture
  - Fill up the glass  
with knowledge

***I am always ready to learn, although I do not always like being taught.***

- Winston Churchill



Winston Churchill, 31 December 1941,  
Photograph by Yousuf Karsh, Ottawa, Canada

# Lead a horse to water....





# Problems student have....

- 2 - Misunderstandings

- Need to identify this by **INQUISITION.**

- Socratic method
  - Students don't like their professors to do this.
  - Extract bad, replace with good



# Solution: PAL sessions

- Voluntary
- Active student participation
- Learn what they don't know
- Learn what they have MIS-LEARNED
- No "Prof" pressure
- Keeps students involved in the course material during the term



# PAL = Peer Assisted Learning

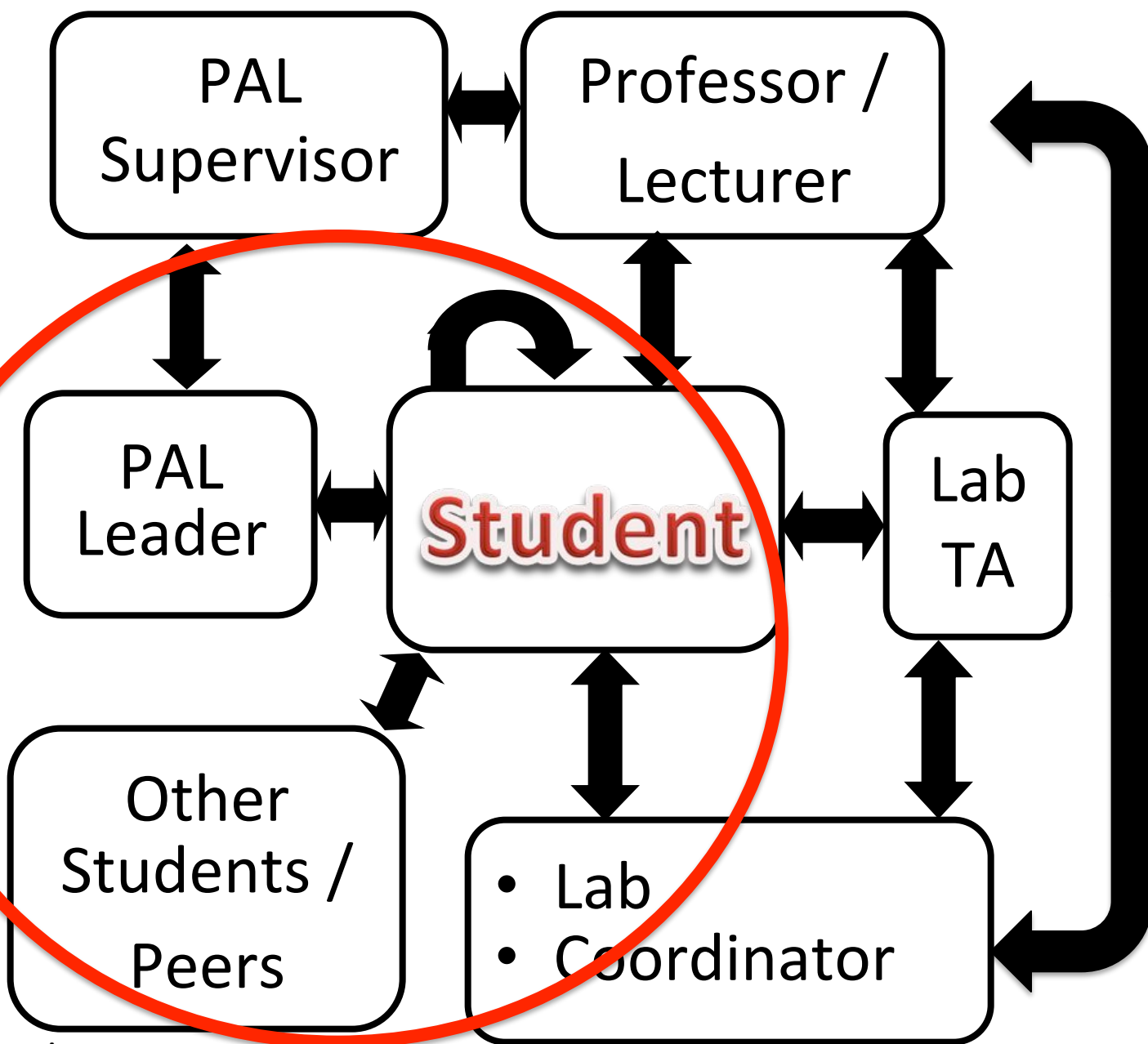
- Origin and History
- Presentation in 207
- Our modifications.
- How it currently works



# Origin of PAL

- Origin –From “Supplemental Instruction (SI)”
- Developed by Dr. D. Martin in 1973
- From University of Missouri – Kansas City, Mo
- It’s an academic assistance program that increases student performance and retention.
- Used on historically difficult classes/courses (low grades/ many withdrawals)
  - not identified with weak students
- Open to all students – attend voluntarily
  - Consequence: not viewed as remedial
- Peer Assisted Study Sessions (PASS)

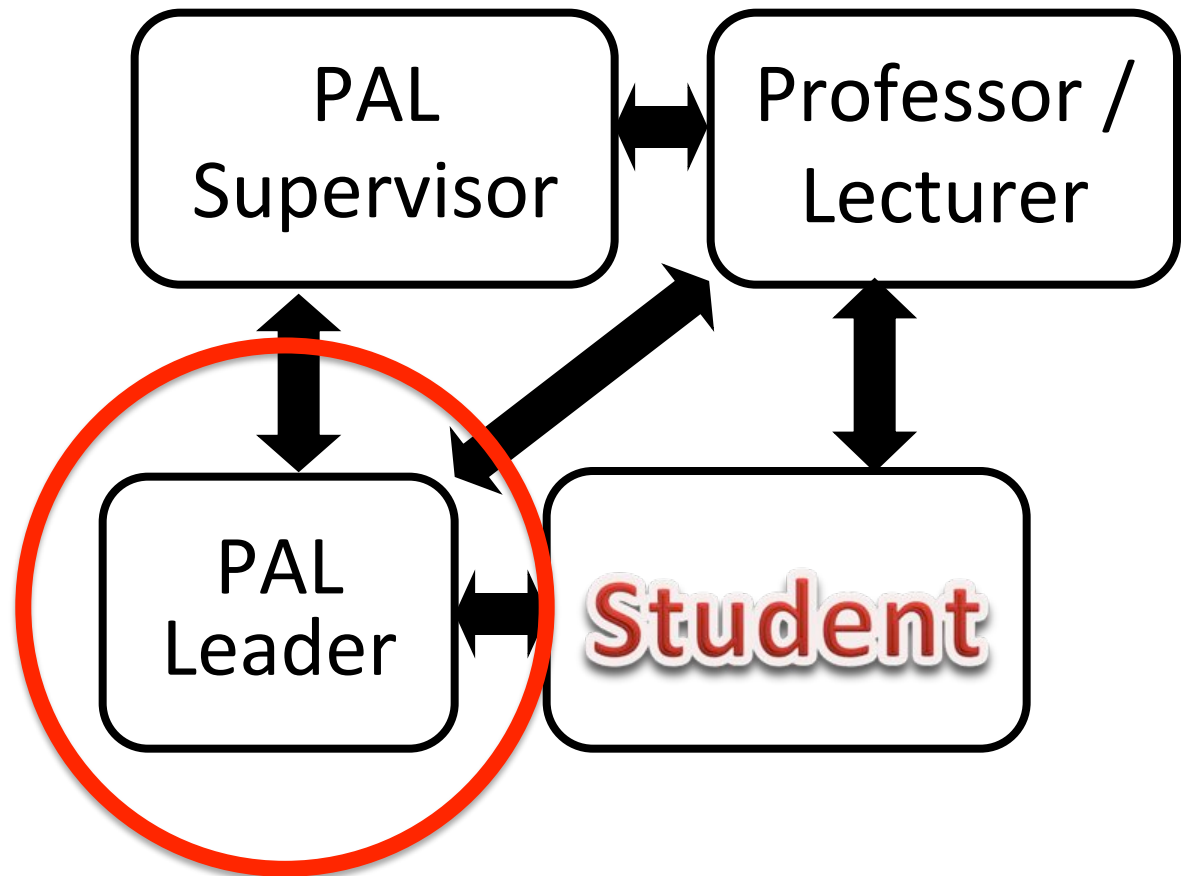
People who can help students learn:



PAL = Peer Assisted Learning

# PAL Administrative Organization

- Weekly meetings
- Instruction and organization
- Feedback





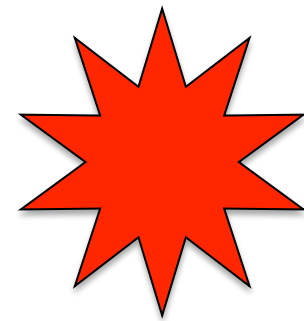
## PAL Leaders

- Undergraduate student – peer, not superior
- Trained – 1-2 day session, including mock sessions to gain confidence
- Drawn from “Genetics” students – balance of knowledge and instructor potential
- Paid (but good for teaching leadership and improving their résumé, too)

## PAL Leaders (2)



- Goal is to lead, not teach
- Serve as a model student – guide, mentor
- Integrate course content and learning skills
- Attend class with students
- Receives training and supervision
- Instructors support the program



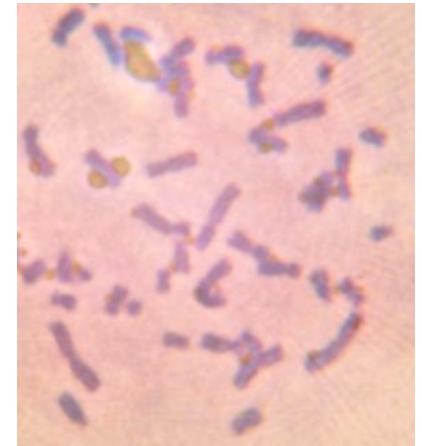


## A typical PAL session

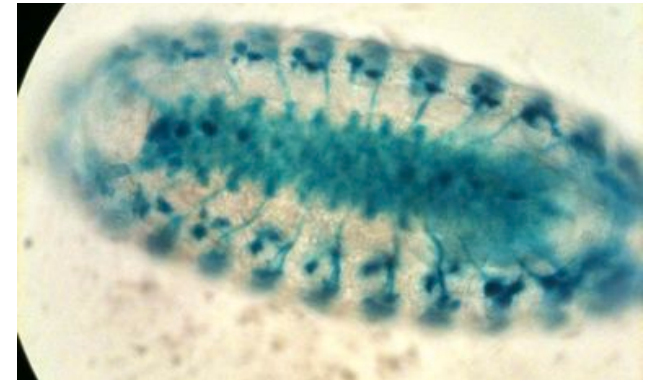
- ~50 minutes in a small classroom
- ~5-35 students – voluntary attendance
  - get more just before exams
- Preparation – Students come prepared with web download
- Each session has a specific topic determined before hand.

# A typical PAL session (2)

- Leader opens by explaining the class schedule
- Start with an activity – video, review session, demo of some principle (e.g. pool noodles = chromosomes)
- Set a series of questions – web download
  - each group “solves” the question – leader circulates
  - uses the “Socratic method” to help students
- Then each group presents the question to the class
  - all student go through the “thinking” needed for all questions



# Student Benefits



- Proactive & participatory,  
not reactive & passive
- Promote peer collaborative learning
- Non-remedial, open to all – no stigma
- Improves/creates learning relationships
- Comments suggest students are more confident going into exams.
- Learn better ?

# Who goes to PAL sessions?

- Those who want to help themselves
  - self-selecting (not require in the course)
- Mix of students attend – not all
- Smart ones - want to confirm they really do know the course content
- Middle ones - want to improve their grade
- Weak ones - need “HELP!”

# Does PAL work?

- Don't really know – no data
- Feedback from participants is positive
- Students who took PAL recommend to next year's class.

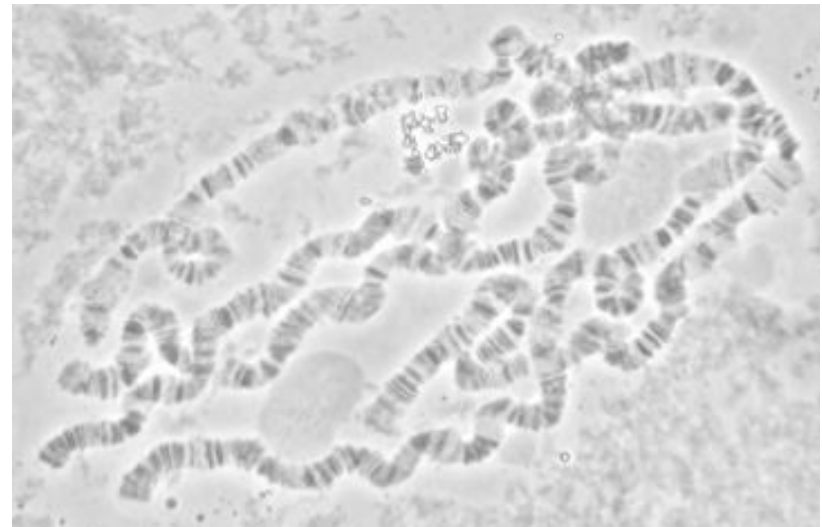
# Students' Advice

- On a Final Biol 207 Exam the 250 students were asked the following question:
- ***What advice would you give to a student who was just beginning this course (e.g next term's/year's students)?***  
***(2 marks – for any reasonable response).***
- The following is a summary of their answers:
- 56% - Do the problem assignments / sample exams
- 49% - Attend the workshops
- 30% - Keep up with the readings and problems
- 18% - Attend/stay awake/pay attention in class
- 15% - Ask for help



# Is PAL Effective?

- How to measure?
- Scientist wants to...  
but ethics....
- Can't



- Student satisfaction?  
Some student are, other indifferent, few dislike it (not what they want)
- Students looking for “bang-for-the-buck”

# Will the PAL system work for you?

- Can have a large class – small OK, too
- Need learning by doing – active learning, problem solving
- Won't fix all learning/teaching problems.
- Need effort to target the student's learning.
- Opportunity to make errors in PAL session and before the EXAM so that they can be corrected.



## Summary



- PAL Sessions are working in BIOL 207
- Offer an alternative/additional method of active student learning
- Learn how to learn the course content
- Positive student feedback from those who attend
- Not for everyone

# Acknowledgments



- Dr. C. Paszkowski & Maggie Haag  
– initiated the program
- Supervisors – Dr. L. Prichard & M. Harrington.
- PAL leaders – taught in the sessions
- Dept. of Biological Sciences – funding
- Faculty of Science - Teaching, Learning, Enhancement Fund (TLEF) for the first year.

Questions?