Precision Medicine Pathway (PMP)

Co-Directors:
Tim Schedl (Genetics)
Chris Gurnett (Neurology)
David Spencer (Medicine)
Gary Stormo (Genetics)

Goal:
Introduce you to the uses of genomic and genetic information in the diagnosis and treatment of disease, from current concepts and practice to gaps that need to be filled in achieving precision medicine.
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**Purpose:**
- Expand/extend your educational experience in the areas of genetics, genomic & bioinformatics related to medicine. *(need not have any relationship to your thesis research)*
- For some students, make clinical connections related to thesis research.
- Provide career path information, for postdoctoral research areas or alternatives to traditional PI track.
Pathway components

1. Course, fall of 1st and 2nd years
2. Journal club, spring 1st year, year 2
3. Clinical connections, spring 1st year, year 2
4. Retreat (yearly)
1. Genetics & Genomics of Disease course  
   (Bio 5487) Fall  
   Monday & Wednesday, 3:00 - 5:00 (Fall)  
   Round table presentation/discussion

For class presentation topics see  
http://pmpathway.wustl.edu/class-information-2021/

Examples:  
- Translational medicine & ALS clinical trials - Tim Miller, Neurology  
- Single cell RNAseq in AML - Allegra Petti, Medicine

- Ethics panel,  
- Career panel,  
- Identify pathogenic variation in deidentified patient exome/genome sequence (Mendelian case and a cancer case) using the WU Franklin Genoox analysis platform.
2. Journal club (meets every two weeks)
   - Attend Human Genetics Journal club
   - spring year 1, fall & spring year 2
   - present in spring year 2
3) Clinical connections

a) Attend recurring clinical conferences (2 per semester)
   - Pediatric Genetics Conference (Mondays)
   - Undiagnosed Disease Network Genomics Board (3rd Fri)
     (Fall & Spring of 2nd year)

b) Shadowing a clinician (spring year 1 and beyond)

c) Clinical mentored project (year 2) [Optional]
4) Retreat - September 28, 2023

- Keynote speaker: Dr. Wendy Chung, Chief of Clinical Genetics Columbia University.
- Title: “Supporting Equity in Precision Pediatrics”
- Presentation by students (2\textsuperscript{nd} and 3\textsuperscript{rd} year) on thesis research or on Clinical mentored project
Where are PMP graduates now?

**Postdocs (~60%)**
- WashU, Broad Institute, Dana-Faber, UCLA, U Penn, U Wisconsin, U Utah
- Genentech, Novartis Research Foundation

**Industry (~20%)**
- BioNTech USA, Genetech Inc, Benson Hills, Domo Inc

**Consulting and venture capital (~20%)**
- LEK Consulting, Humana, McKinsey & Company
Details on Eligibility and the Application to the Precision Medicine Pathway can be found on the DBBS Website - Interdisciplinary Research Pathways section

Application due date, June 15, 2023.

Will accept up to 10 students.

Contact me if you have questions (ts@wustl.edu)
Eligibility:
- Students applying at the end first year of graduate school must be good academic standing.
- Students applying at/or later than the end second year of graduate school should have completed the Program-specific QE.
- Students are strongly encouraged to have completed one or more of the following courses: Genomics (Bio 5488), Advanced Genetics (Bio 5491) or Fundamentals of Mammalian Genetics (Bio 5285)
- All interested students should apply.
Application:
- Name, birth date, address, academic program and year and citizenship.
- Contact information (e-mail and telephone)
- PI in which thesis work is being conducted*
- CV or resume (include a list of graduate courses taken and grade)
- Paragraph description of why student is interested in the Pathway
- Paragraph description of thesis research*.
- Assemble these components into a single PDF, and send to <pmpathway@genetics.wustl.edu>
- Two letters of recommendation, one of which is from the thesis advisor*, should be sent directly to <pmpathway@genetics.wustl.edu>

All application material should be submitted by June 15, 2022, to <pmpathway@genetics.wustl.edu>

* If you have not yet joined a thesis laboratory then a rotation lab project and a rotation advisor can be used as a substitute (please indicate if this is the case).
Talk with current students:

Ariya Chaloemtoem
Julie Choi
My Hoang
Mariam Khanfar
Nahyun Kong