Pre-Med Research Experience

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University of Montana
Reasons to do undergraduate research

• Get a good(better) letter of evaluation
• Get experience discerning anecdotal data from significant data, a valuable skill for any career
• Many admissions officers are scientists as well
  – Any connection during interviews is a good thing—common ground, conversation starters
• The practice of medicine has elements of the scientific method embedded in it. (sGOT; liver ruleouts)
• Undergraduate research may be a requirement for admission to medical school (competitive edge)
Albany

- No recommendation or requirement
West Virginia

- No requirement or recommendation
Utah

• Research recommended
North Dakota

• No recommendation or requirement for research
Univ. Washington

- No recommendation or requirement
Reasons research may not be necessary

• You know what is involved in a clinical trial
• You understand discernment
• You have had statistics
• You understand the scientific method
• You already have 6 great letters
Ms. Elli Mae was a student in my Moonshine 101 class in the fall of 2009. She took my class on a Credit/Non-Credit basis and passed the class. Ms. Mae attended class regularly and turned in the assignments on time.

Elli Mae has a pleasant personality, is mature, cooperative and a good listener. I feel she is capable of doing better than her grades indicate. I feel that with proper training and mentorship she will make a good health professional.

I wish her well in her endeavors,
I have come to know Jethro well these last three years. I have known him as a student in my Advanced Hillbilly Culture class at the University of Montana, and as both a student and leader in the Global Undergraduate Pre-med program. (This last is a self-run student program to give undergraduates and opportunity to volunteer with medical providers in the developing world.)

Jethro is, as his resume makes clear, is an accomplished student, athlete, and leader. I have found him inquisitive, thoughtful, personable, and remarkably resourceful: note the number of programs he participated in, often as a leader. He would make an excellent physician.

I recommend him wholeheartedly.
I have known Jethro since Spring of 2009. He approached me initially because of his interest in the work I am doing in partnership with physicians on the Ipso Facto Indian Reservation and he expressed an interest in joining my lab. He offered to volunteer several hours per week and that relationship has grown now to include his own independent project in my laboratory.

Jethro is a very pleasant, hard-working student with a very positive attitude. He is very persistent, methodical, and skilled at communication. His work on lab projects has been exemplary and has helped to advance the goals of the laboratory. This fall, he helped to reestablish order in our database and clinical sample storage systems. He performed well mastering several techniques new to him. These included isolation of genomic DNA from human blood samples, quantitation and aliquoting of DNA at various concentrations, PCR, allele specific restriction digests, capillary electrophoresis. When the instructions that I gave left room for some decision-making, he took the initiative and made good choices. It is very easy to develop trust in his abilities in a short time. His work has contributed to one presentation at a National meeting so far and his work will be submitted to a high impact journal as part of a large multi-institutional study of the pharmacogenetics of a tribal population.
Research Opportunities at UM (examples)

- **Dr. Diana Lurie**
  - Field of Study: Stroke, CNS injury, lead exposure, Ayurvedic Medicine
  - Email: Diana.Lurie@mso.umt.edu
  - Phone Number: 243-2103
  - Office Location: Skaggs 383
  - For more information please reference the website;

- **Dr. Nick Natale**
  - Field of Study: anticancer drug discovery, anticonvulsant screening, diabetes
  - Email: nicholas.natale@umontana.edu
  - Phone Number: 243-4132
  - Office Location: Skaggs 477B
  - For more information please reference the website;

- **Dr. Mark Pershouse**
  - Field of Study: genetics of cancer, cancer in medically-underserved populations
  - Email: mark.pershouse@mso.umt.edu
  - Phone Number: 243-4769
  - Office Location: Skaggs 282
  - For more information please reference the website;

- **Dr. Elizabeth Putnam**
  - Field of Study: Asthma, lung fibrosis, respiratory disease, cancer, medically-underserved populations
  - Email: elizabeth.putnam@umontana.edu
  - Phone Number: 243-4794
  - Office Location: Skaggs 395B
  - For more information please reference the website;
• **Dr. Scott Wetzel**
  - Field of Study: activation and subset differentiation of CD4⁺ T lymphocytes.
  - Email: scott.wetzel@umontana.edu
  - Phone Number: 243-2168
  - Office Location: Clapp Bldg. 216
  - For more information please reference the website;  

• **Dr. Steve Lodmell**
  - Field of Study: viral RNA structure and function
  - Email: stephen.lodmell@umontana.edu
  - Phone Number: 243-4304
  - Office Location: CHCB (Clapp) 202
  - For more information please reference the website;  

• **Dr. Scott Samuels**
  - Field of Study:
  - Email: samuels@mso.umt.edu
  - Phone Number: 243-6145
  - Office Location: CHCB (Clapp) 207
  - For more information please reference the website;  
    [http://hs.umt.edu/dbs/people/default.php?s=Samuels](http://hs.umt.edu/dbs/people/default.php?s=Samuels)
• **Dr. Orion Berryman**
  • Field of Study: Organic chemistry and molecular recognition
  • Email: orion.berryman@umontana.edu
  • Phone Number: 243-6805
  • Office Location: Chemistry 009
  • For more information please reference his website;
    [http://www.cas.umt.edu/casweb/faculty/FacultyDetails.cfm?id=2056](http://www.cas.umt.edu/casweb/faculty/FacultyDetails.cfm?id=2056)

• **Dr. Klara Briknarova**
  • Field of Study: Structural biology, biomolecular nuclear magnetic resonance (NMR) spectroscopy, protein structure, function, and dynamics.
  • Email: klara.briknarova@umontana.edu
  • Phone Number: 243-4408
  • Office Location: Chemistry 111
  • For more information please reference her website;
    [http://www.cas.umt.edu/chemistry/facultyDetails.cfm?id=926](http://www.cas.umt.edu/chemistry/facultyDetails.cfm?id=926)

• **Dr. Sarah Certel**
  • Field of Study: Behavioral neurobiology, developmental genetics, cell biology
  • Email: sarah.certel@mso.umt.edu
  • Phone Number: 243-6425
  • Office Location: Skaggs Building 393
  • For more information please reference her website;
    [http://www.cas.umt.edu/casweb/faculty/FacultyDetails.cfm?id=1576](http://www.cas.umt.edu/casweb/faculty/FacultyDetails.cfm?id=1576)

• **Dr. Mark Grimes**
  • Field of Study: Structural and functional neuroscience, biomolecular structure and dynamics
  • Email: mark.grimes@mso.umt.edu
  • Phone Number: 243-4977
  • Office Location: Health Science 5
  • For more information please reference his website;
    [http://dbs.umt.edu/people/facultyDetails.php?id=884](http://dbs.umt.edu/people/facultyDetails.php?id=884)

• **Dr. Ric Hauer**
  • Field of Study: Stream and wetland ecology (aquatic ecology), geomorphology, hydrology, nutrient cycling, bioenergetics, population and community ecology
  • Email: ric.hauer@umontana.edu
  • Phone Number: 243-4848
  • Office Location: Davidson Honors College 007
  • For more information please reference his website;
    [http://www2.umt.edu/flbs/people/Hauer~183/default.aspx](http://www2.umt.edu/flbs/people/Hauer~183/default.aspx)
• **Dr. Jesse Hay**
  Field of Study: Molecular cell biology
  Email: jesse.hay@umontana.edu
  Phone Number: 243-2381
  Office Location: Skaggs Building 390A
  For more information please reference his website;  
  [http://dbs.umt.edu/people/facultyDetails.php?id=886](http://dbs.umt.edu/people/facultyDetails.php?id=886)

• **Dr. Mike Minnick**
  Field of Study: Microbiology, rickettsiology
  Email: mike.minnick@mso.umt.edu
  Phone Number: 243-5972
  Office Location: Health Sciences 509/510
  For more information please reference his website;  
  [http://www.cas.umt.edu/casweb/faculty/facultyDetails.cfm?id=899](http://www.cas.umt.edu/casweb/faculty/facultyDetails.cfm?id=899)

• **Dr. Anna Sala**
  Field of Study: Plant physiological ecology, tree physiology, forest ecology
  Email: anna.sala@umontana.edu
  Phone Number: 243-6009
  Office Location: Natural Sciences 117A
  For more information please reference her website;  
  [http://dbs.umt.edu/people/facultyDetails.php?id=904](http://dbs.umt.edu/people/facultyDetails.php?id=904)

• **Dr. Stephen Sprang**
  Field of Study: Structural biology and biochemistry, biological signal transduction
  Email: Stephen.sprang@umontana.edu
  Phone Number: 243-6028
  Office Location: Interdisciplinary Science Building 103
  For more information please reference his website;  
  [http://www.cas.umt.edu/casweb/faculty/facultyDetails.cfm?id=941](http://www.cas.umt.edu/casweb/faculty/facultyDetails.cfm?id=941)

• **Dr. Jack Stanford**
  Field of Study: Limnology, groundwater and flood plain ecology, systems ecology
  Email: jack.stanford@flbs.umt.edu
  Phone Number: 982-3301
  Office Location: Flathead Lake Biological Station
  For more information please reference his website;  
  [http://www2.umt.edu/flbs/People/Stanford~1296/default.aspx](http://www2.umt.edu/flbs/People/Stanford~1296/default.aspx)
Dr. Chuck Thompson
Field of Study:
Email: chuck.thompson@mso.umt.edu
Phone Number: 243-4643
Office Location: Skaggs Building 477A
For more information please reference his website;
http://biomed.health.umt.edu/users/charlesthompson

Dr. Brown
(SB 204) SCHOOL PSYCH
Will work with selected students. Projects will depend on current opportunities.
1. School-based crisis prevention and intervention
2. International school psychology
3. Bereavement in school-age children
4. Resilience in school-age children

Dr. Duncan Campbell
(SB 312) CLINICAL
1. Barriers to depression care: Stigma and depression treatment; stigma activation; attitudes and beliefs about depression and depression treatment options
2. Primary Care-Mental Health Integration efforts; health psychology; the healthcare system.

Dr. Bryan Cochran
(SB 143) CLINICAL
Will work with selected students. Contact Dr. Cochran for research lab application.
1. Sexual minority (LGBT) mental health
2. Gender Nonconformity
3. Substance abuse and dependence
4. Prescriptions drug misuse

Dr. Luke Conway
(SB 239) SOCIAL PSYCH
Will work with 6-12 selected students
For info, please see webpage at http://hs.umt.edu/politicalcognition/ and click on "join the lab."
1. Political and Social Psychology
2. Causes and consequences of cognitive complexity (relevant to politics, culture, and mental health)
How to Join a Research Lab

• Identify faculty with interests similar to yours
  – This is contingent upon having UG research on your campus
  – If you don’t look, into summer research opportunities

https://www.aamc.org/members/great/61052/great_summerlinks.html

• Stop by their lab/office to talk
• Set up an appointment by email
• Offer to volunteer for a defined period as a trial
• Do well
  – Be punctual
  – Be professional
  – Be imaginative
  – Take some (measured) initiative
  – Give them your best effort
  – Have fun
What you should expect

• Publications-in the best of cases
• National Meeting presentations-certainly
• Regional Meeting presentations-always
• Course credit-if you need it
• Senior Honor’s Thesis-Yes
• A better understanding of research and the mindset of many admissions committee members
Take Home Message

• Become a professional shopper for your patients
• Get a better letter
• Learn the Scientific Method
• Find common ground with interviewers
Atlantis

• [https://atlantisglobal.org/](https://atlantisglobal.org/)
REU and Others

- NSF funds a large number of research opportunities for undergraduate students through its REU Sites program. An REU Site consists of a group of ten or so undergraduates who work in the research programs of the host institution. Each student is associated with a specific research project, where he/she works closely with the faculty and other researchers. Students are granted stipends and, in many cases, assistance with housing and travel. Undergraduate students supported with NSF funds must be citizens or permanent residents of the United States or its possessions. An REU Site may be at either a US or foreign location.
EuroScholars

- https://euroscholars.eu/

EuroScholars Program

EuroScholars is a unique research abroad programme for highly talented undergraduate students from US and Canadian institutions looking for an international research experience.

EuroScholars offers research projects at 5 internationally renowned European Research Universities in almost any discipline.

EuroScholars presented a session at the CUR - Undergraduate Research Programs Conference 2019. A copy of the presentation is now available on our website.
SURF/SURP

SURF

The Summer Undergraduate Research Fellowships (SURF) program is one of the “crown jewels” of Caltech. Since 1979, SURF students have had the opportunity to conduct research under the guidance of experienced mentors working at the frontier of their fields.

SURF is modeled on the grant-seeking process:

- Students collaborate with a potential mentor to define and develop a project
- Applicants write research proposals as part of the application process
- Faculty review the proposals and recommend awards
- Students carry out the work over a 10-week period during the summer
- At the conclusion of the program, students submit a technical paper and give an oral presentation at one of several SURF Seminar Days, symposia modeled on a professional technical meeting.

In 2020, Fellows will receive a $6,420 award for the ten-week period.
SIPs

- https://www.training.nih.gov/programs/sip