Undergraduates Seeking Internships

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Colin Hemez

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Education

Yale University (New Haven, CT), Expected graduation May 2018
- Biomedical Engineering (B.S., systems biology concentration) and History of Art (B.A.)
- *Academic interests:* synthetic biology, infectious diseases, art conservation, Cold War photography, East Asian art
- GPA: 3.96

Los Alamos High School (Los Alamos, NM), Graduated with honors May 2014
- GPA: 4.00; SAT: 2250; ACT: 34
- SAT subject tests: French: 800; Chemistry: 800; Math II: 800; Literature: 720

Research Experience

Yale University Isaacs Lab – Undergraduate Researcher (West Haven, CT)
September 2015 to present
- Principal investigator: Farren Isaacs (Department of Molecular, Cellular, and Developmental Biology)
- *Current projects:* Engineer synthetic syntrophic relationships between bacterial communities using genetically recoded *Escherichia coli;* Develop targeted mutagenesis techniques in marine cyanobacteria for drug discovery and production

X-ray Fluorescence Technician – Yale Institute for the Preservation of Cultural Heritage (West Haven, CT)
Spring 2017 to present
- Principal investigator: Aniko Bezur (Director, Technical Studies Lab)
- Used x-ray fluorescence for the analysis of early-20th century photographs in collaboration with Princeton University Art Museum

Yale International Genetically Engineered Machines (iGEM) Team – Head of Research (New Haven, CT)
January 2015 to November 2016
- *Head of research*: Recruit and select students for 2016 research team, plan and lead journal clubs to train new researchers, develop summer research plan and timeline, mediate communication between researchers and faculty advisors (Farren Isaacs and Stephen Dellaporta, Yale MCDB)
- *Research team member:* Performed microbiological research in a seven-person undergraduate team. Presented project at the international iGEM competition (Boston, MA), and earned a silver medal.

Los Alamos National Laboratory Biosciences Division – Student Lab Technician (Los Alamos, NM)
May 2013 to August 2014
- Principal Investigator: Andrew Bradbury
- Expressed, purified, and conducted x-ray crystallography studies of fluorescent single-chain antibodies; Selected and characterized antibodies (from a phage library) against non-phosphorylated immunoreceptor tyrosine-based activation motifs (ITAM) in human growth factor receptor complexes

Publications and Presentations

- *Hemez, C. F.* "What virus evolution can tell us about the next epidemic." *Yale Global Health Review* **2017**, 4(2), 45-48.
- Ma N.J., *Hemez C.F.,* Barber K.W., Rinehart J., and Isaacs F.J. "Unassigned codons elicit ribosomal rescue and impair expression of horizontally-transferred genes." (Under review, *Molecular Cell*)

- 2016: Institute of Biological Engineering Annual Conference – Greenville, SC
- 2015: International Genetically Engineered Machines (iGEM) Annual Conference – Boston, MA

Awards and Honors

- 2016: Member, Tau Beta Pi (engineering honor society; must be in the top 1/8th of engineering juniors to qualify)
- 2016: Yale Science Scholars Fellowship
- 2015: Silver medal, International Genetically Engineered Machines (iGEM) Annual Conference

Leadership and Activities

Yale University Art Gallery – Matting and Framing Assistant (New Haven, CT)
January 2015 to present
- Assist in the matting and framing of artworks on paper for exhibition, storage, and shipment to other museums

Yale Veteran Ascents – Secretary (New Haven, CT)
September 2016 to present
- Organize and run indoor rock climbing activities for U.S. veterans with physical disabilities and post-traumatic stress disorder
- Develop skills in adaptive climbing (techniques that enable individuals with disabilities to rock climb)

Skills

- **Laboratory Skills:** Cell and tissue culture, molecular cloning, flow cytometry, phage display, Western blotting, x-ray crystallography, x-ray fluorescence analysis, PCR/Gibson assembly
- **Software Skills:** MATLAB, Python, Adobe Photoshop and Illustrator, Office Suite, HTML (novice)
- **Personal:** Fluent in French (dual citizen), avid runner (6-time New Mexico high school cross country/track and field state champion)