

Abundant Opportunities and Support: LRGF Reflection



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LRGF Alumnus

Sandia National Labs, R&D Engineer

DOE NNSA SSGF/LRGF Virtual Program Review

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Topic Overview

- Quick self-introduction
- Benefits of the LRGF
- Advice for residencies
- Advice for new fellows



Quick Background: Career Trajectory



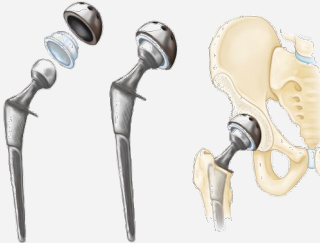
San Diego, CA



2010



Cal Poly Pomona
B.S. Chem. Eng.
Track and Field (PV, Dec)
Corrosion research
Biomedical studies
Adv: Dr. Vilupanur Ravi

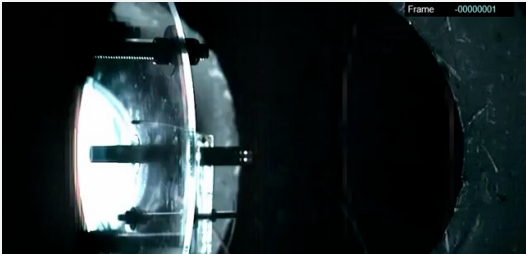


2015

Dr. Naresh Thadhani



Dr. Greg Kennedy



Georgia Tech
Ph.D. Materials S&E
High velocity impact experiments
Shock compression
Adv: Dr. Naresh Thadhani



2017

Dr. Anthony Fredenburg



Los Alamos Nat'l Lab
X-Theoretical Design
Shock physics experiments
Multi-physics simulations
Adv: Dr. Anthony Fredenburg



2018

Dr. Chris Rousculp



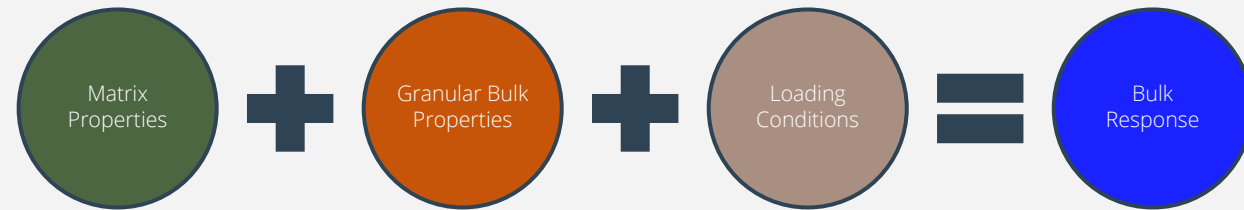
Sandia National Laboratories

2020-Present
Mech. Engineer
Org. 08363
Impact experiments
Multi-physics simulations
General science & engineering
Mentor: Tracy Vogler



My area of research: shock physics & granular materials

Combined experiments and comp. modeling to generate better predictive capabilities:



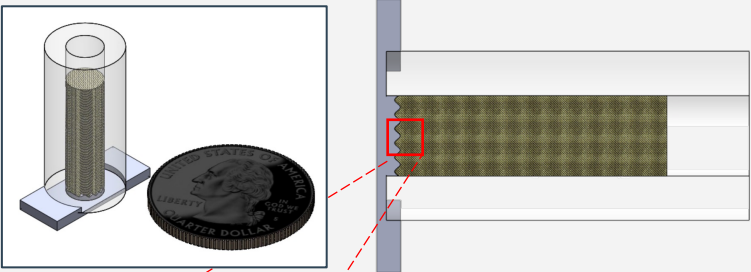
Planetary Body Impacts



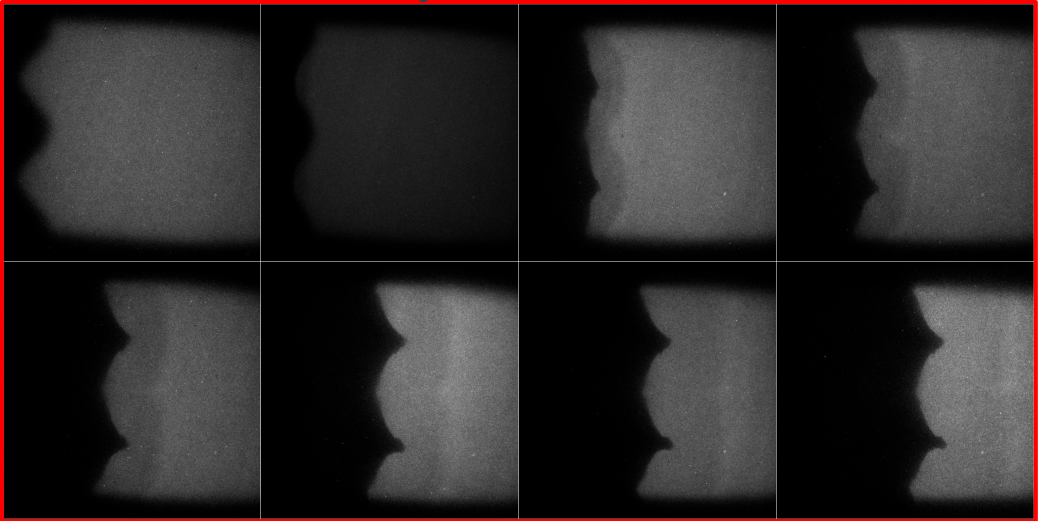
Ceramic Armors



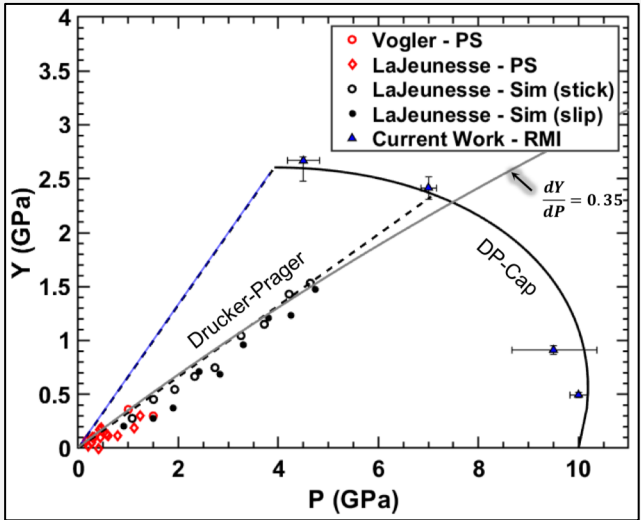
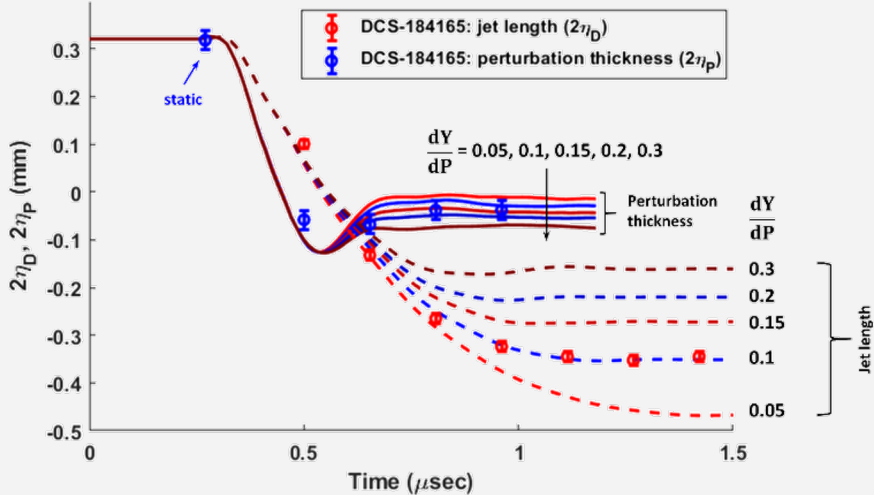
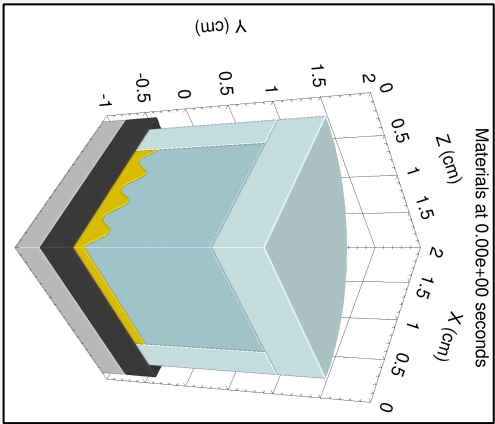
My current projects at Sandia are mostly focused on measuring and modeling granular dynamic strength:



RMI inversion and jet formation



2.5 mm



Plots created by M. Hudspeth and T. Vogler



Most Significant Benefits of LRGF**

More funding

More time for research

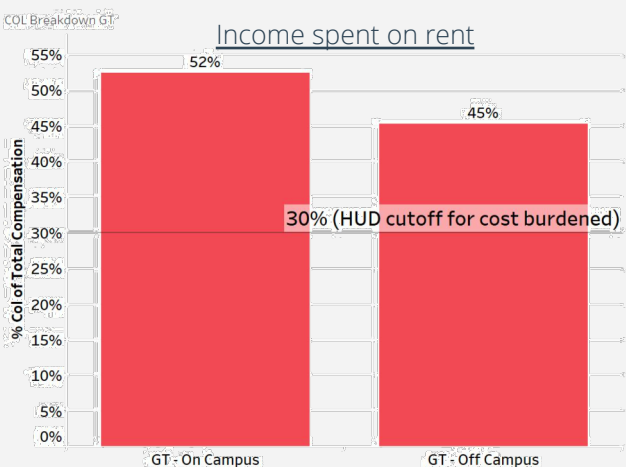
More freedom in residency/internship scheduling

Prestigious and welcoming community

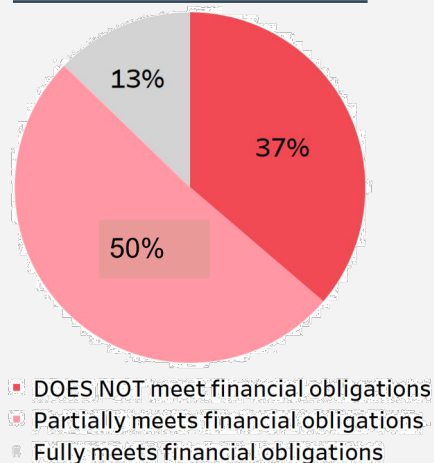
*** This is my personal opinion, it is not influenced by my past or present employers/funders, nor may it reflect their views.*

The financial support that Krell provides is incredibly helpful

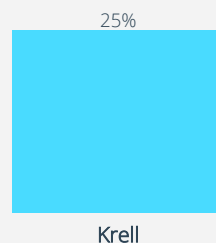
Prior to LRGE:



GRA income satisfaction:

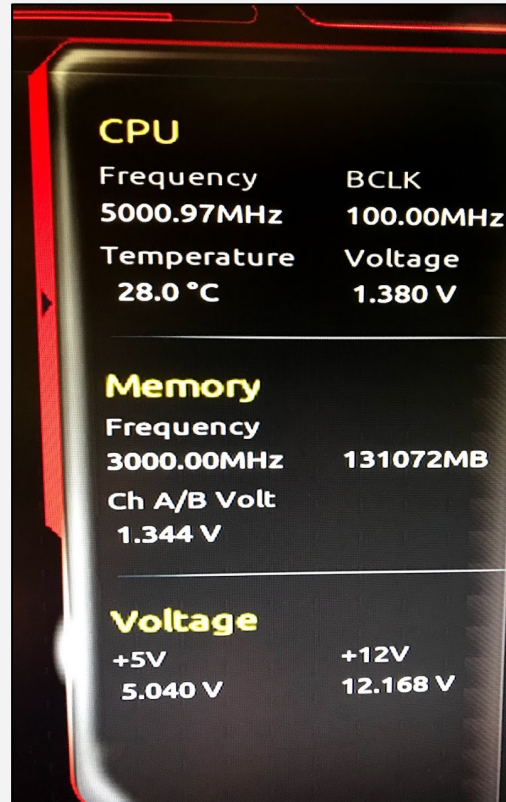


With LRGE:



- My take-home salary increased **+43%**
- While doing residencies, stipend increases to match intern level
- Krell covers health insurance & fees
- Krell covers travel fees for some conferences; allowance covers rest

I used the LRGF allowance to build an HPC server that significantly expedited analyzing my thesis data



CPU	
Frequency	BCLK
5000.97MHz	100.00MHz
Temperature	Voltage
28.0 °C	1.380 V
Memory	
Frequency	
3000.00MHz	131072MB
Ch A/B Volt	
1.344 V	
Voltage	
+5V	+12V
5.040 V	12.168 V

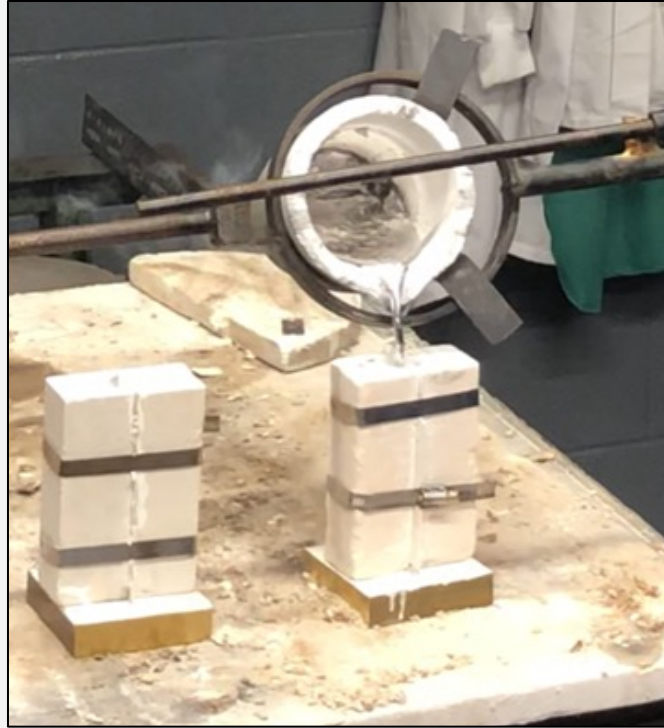
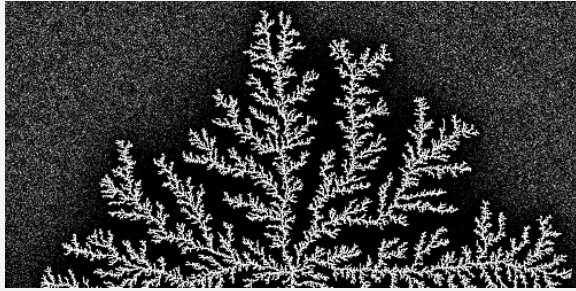
Tech Specs:

- CPU: 8/16 cores/threads, 5.0 GHz
- GPU: Titan RTX, 24 GB VRAM
- RAM: 128 GB, 3000 MHz
- Storage: 21 TB (HDDs & SSDs)
- OS: Ubuntu & Win10
- Partially water cooled

Primary Uses:

- Data analysis: *HiFiPDV* & large data sets
- CAD: *SolidWorks*, etc.

Prior to the LRGF, I spent about 6-8 weeks each year TA-ing. The LRGF freed up this time – a huge boost in productivity.



Krell gave me back **240-320 work hours** per year

This amount of time contributed an **entire chapter** to my thesis

Additionally, I could go to LANL at any time during the year, i.e., not held to semester schedule

The SSGF/LRGF community is welcoming and helpful. These members are your future/present co-workers.



An aerial photograph of the Los Alamos National Laboratory (LANL) campus, showing various large industrial and research buildings, parking lots, and surrounding green fields under a clear sky. The image is overlaid with a semi-transparent blue filter.

Advice for Residencies at LANL

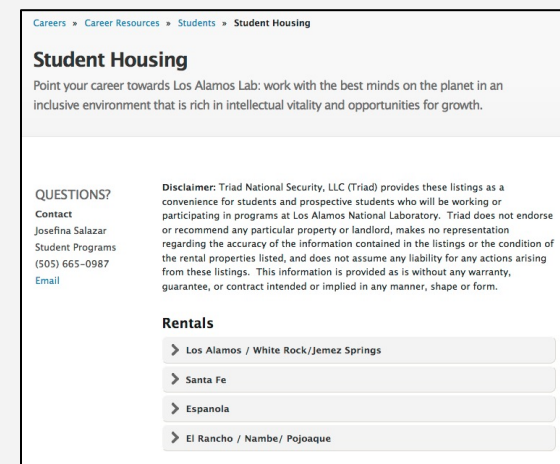
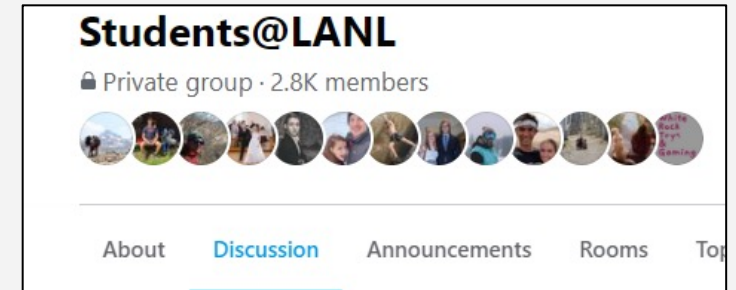
Finding housing

Field trips & tours

Enjoy the local attractions

Finding housing during your residency is difficult

- Start searching 6+ months ahead of time
- Book 4-6 months ahead
- Highly consider having roommate(s)
 - Less money, more fun
 - FB page: *Students@LANL*
- Expect to pay \$700-800/month for a room in someone's house



Go on as many field trips as possible



Example: Trinity Site with X-Division

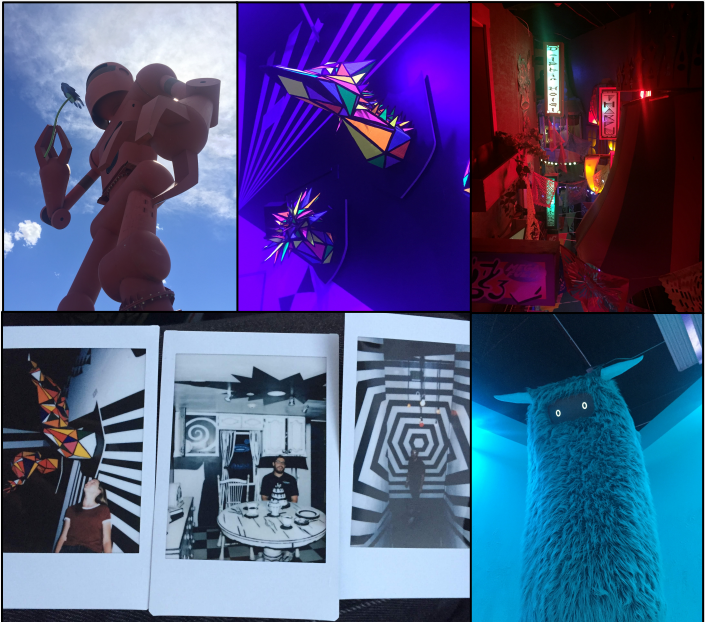


Don't bury yourself in work, see local attractions

Ecological Research



Meow Wolf



Pajarito Mountain, Bandolier, Jemez



Summer Concert Series





Concluding advice for new fellows

Network as much as possible

Use the allowance

Be confident that your work is important



Thank you.

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