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Title:	"My Life To This Point"
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Intended for:	This is intended as a presentation/talk that I will be giving at Southern University, located in Baton Rouge, LA. I will be talking to mostly Freshman about my experiences at LANL, my current job at LANL, my path to getting my job and some future goals.
Issued:	2023-10-04

“My Life To This Point”

Melvin B. Givens

XTD-IDA Post Master’s Student
X Theoretical Design Division

10/11/2023

Further Resources and many image/slides credits for talk:

LA-UR-23-XXXXX

Introduction/My Background

- Born and raised in Baton Rouge, LA
- Southern University (Undergrad):
  - Fall 2011 - Fall 2015
  - Bachelor’s in Mechanical Engineering
- Southern University (Grad School):
  - Spring 2020 – Spring 2022
  - Earned Master’s of Engineering
  - Research pertained to materials. Specifically resin 3D-printing and implementing CO2 to manipulate properties of prints.
  - Research was published.

SOUTHERN JAGUARS™

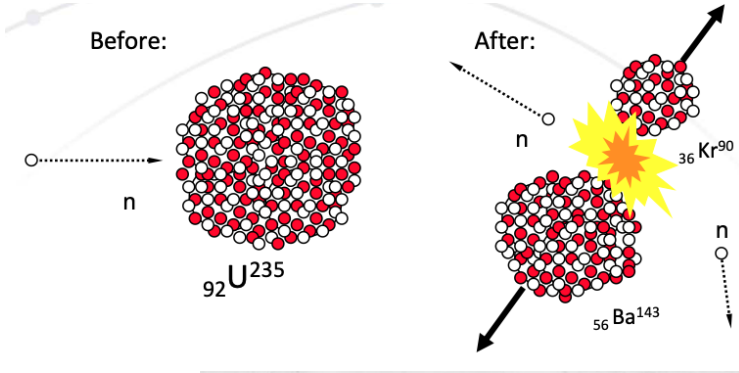
Los Alamos NATIONAL LABORATORY

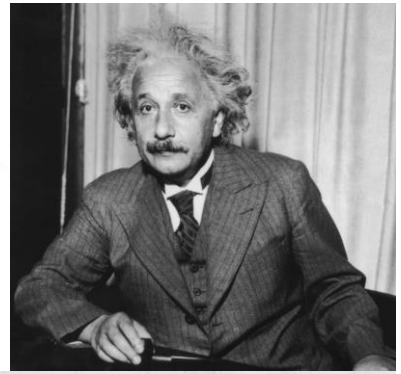
Current Job/Position

- Currently work at the Los Alamos National Laboratory (LANL) in New Mexico as a Post-Master's Student.
- LANL is the birthplace of the atomic bomb that was used during WW2.
- The main goal of the lab is nuclear deterrence. Which involves assessing and maintaining the United States nuclear stockpile and monitoring any potential threats to national security.
- As a student of the lab, I am being mentored on running computer simulations in the hopes of aiding in its overall mission.

The Manhattan Project started from WWII concerns

- Fission was discovered in December 1938
- By 1939, Einstein and others, feared others would make catastrophic bombs with it.
- Einstein's concerns had merit
  - Germany, Russian, and Japan were exploring idea
  - We got there first because we made it our priority
- His letter to Roosevelt launched the Manhattan project.





Albert Einstein
Old Grove Rd.
Nassau Point
Peconic, Long Island

August 2nd, 1939

F.D. Roosevelt,
President of the United States,
White House
Washington, D.C.

Sir:

Some recent work by E.Fermi and L. Szilard, which has been communicated to me in manuscript, leads me to expect that the element uranium may be turned into a new and important source of energy in the immediate future. Certain aspects of the situation which has arisen seem to call for watchfulness and, if necessary, quick action on the part of the Administration. I believe therefore that it is my duty to bring to your attention the following facts and recommendations:

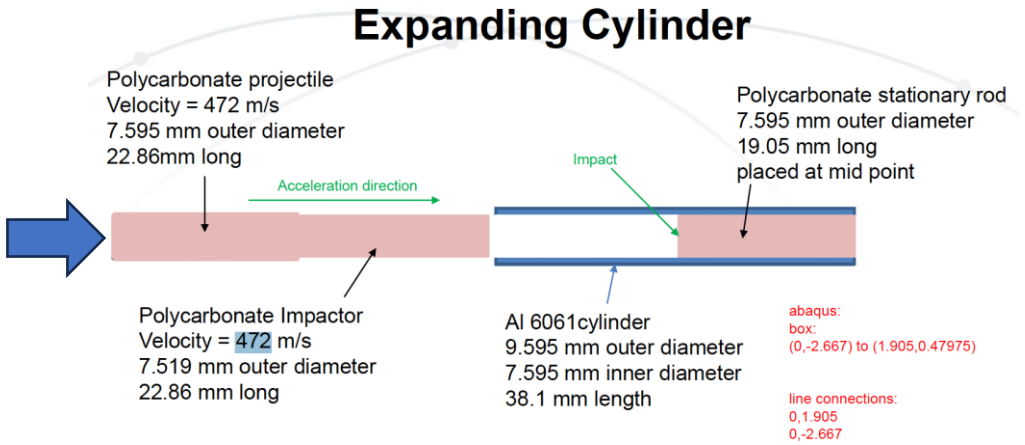
In the course of the last four months it has been made probable - through the work of Joliot in France as well as Fermi and Szilard in America - that it may become possible to set up a nuclear chain reaction

The Manhattan Project was successful.

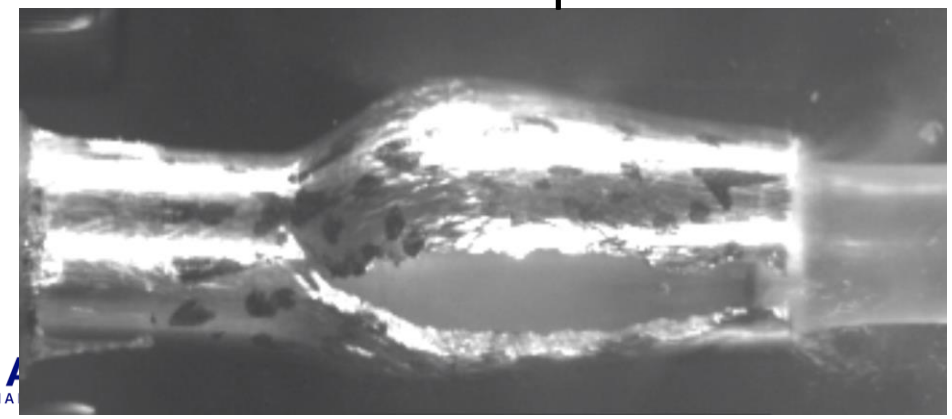
- The Manhattan project was a national effort.
- The Los Alamos National Laboratory (LANL):
  - Designed, tested, and delivered the weapons that helped end World War II, Little Boy and Fat Man
- This remains LANL's central role:
  - Designed and certified 46 of the 63 nuclear weapons put into the US stockpile.
- By law, each year reports to the President the state of the deterrent. (With Livermore and Sandia)

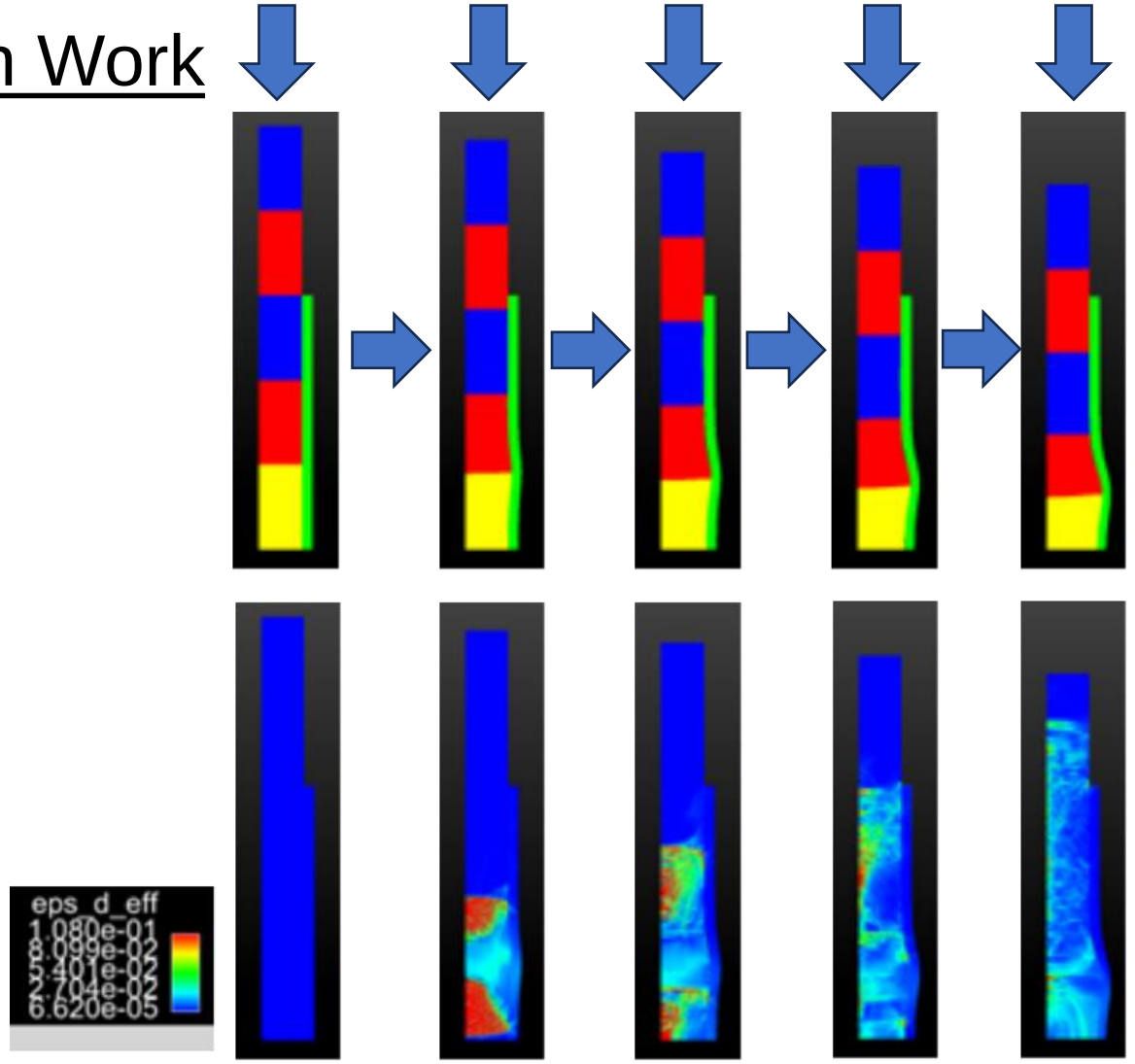
Work I've Done At LANL (Pt. 1)

Gas Gun Work



Aluminum Expansion

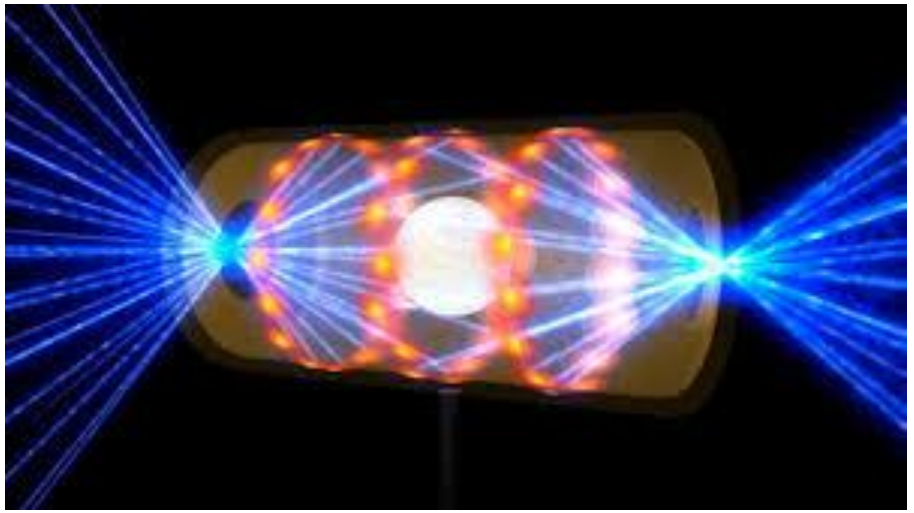


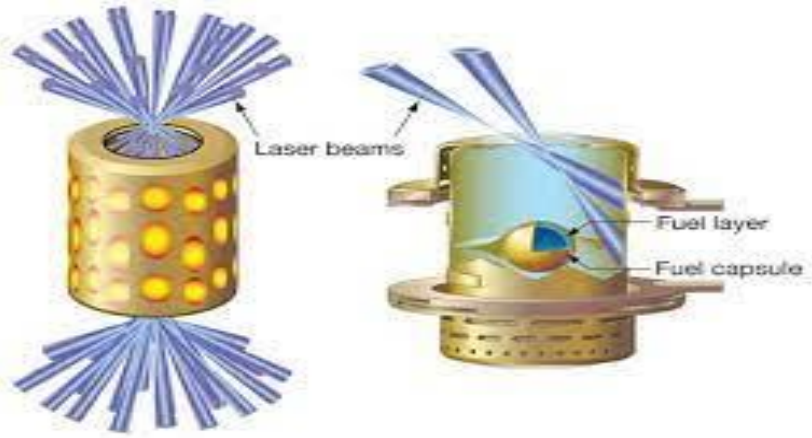


Work I’ve Done at LANL (Pt. 2)

- Fusion Energy Breakthrough with National Ignition Facility (NIF)
- LANL is one of the collaborators in this endeavor
- Spent time modeling NIF setup using LANL code (Ongoing)

NIF Fusion Energy





My Path to Current Place in Life

- I’m currently working at a very historic lab.
  - Great place with many opportunities
- College to LANL was not straightforward path.
  - Hurdles along the way
- Made a couple mistakes along the way.

Don’t Assume Engineering Job is Guaranteed

- I graduated from Southern with Bachelor’s Degree in Mechanical Engineering in Fall 2015
  - I was Student Marshall of Engineering Class
  - I was Magna Cum Laude of Graduating Class

First Job: Walmart Overnight Stocker

Second Job: Construction Technician I

structural

Third Job: Fire Fighter Cadet

BATON ROUGE FIRE DEPT.

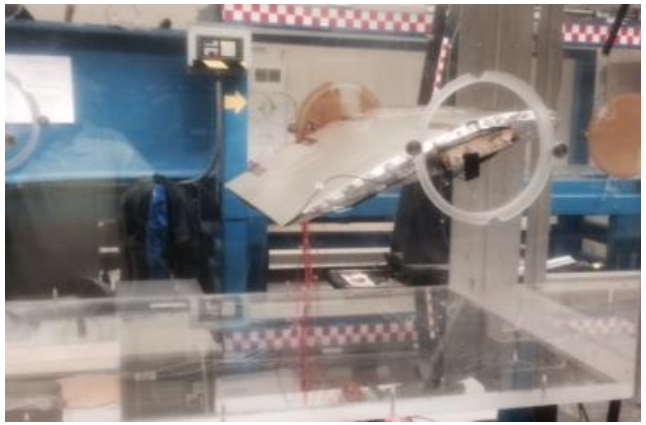
Don’t Be Afraid of Getting Out of Comfort Zone

- I wasn’t too excited about leaving Baton Rouge, LA.
- You may have to change your life plans some.
  - I didn’t intend on going back to school before finding an engineering role.
  - I was stubborn and fixated on my plans.

Get Involved with Research/Go for Grad School

Undergrad Research

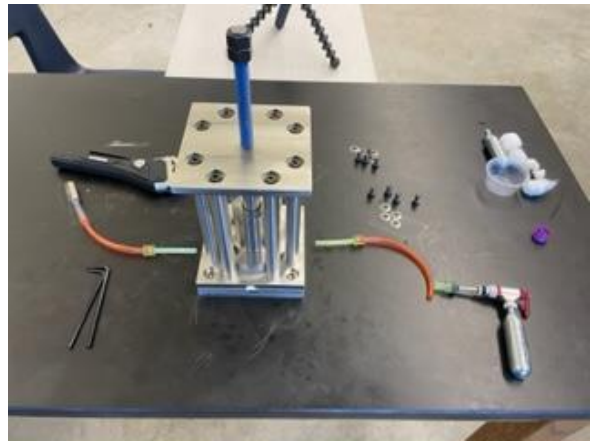
Airfoil



Airfoil in Wind Tunnel

Grad School Research

Resin 3D Printer



Gas Compression Apparatus

Lab Setup

Being a Mentor

Student Programs at LANL

Undergraduate Student Internship Program

Graduate Research Assistant Program

- Gain relevant research experience
- Available during summer break or academic year.
- Can be on-site or remote, depending on mentor's work plan.
- Post-Baccalaureate, Post-Master's and Post Associate's Opportunities available.
- Student Programs Email: studentprograms@lanl.gov
- URL: https://www.lanl.gov/careers/career-options/student-internships/index.php?source=globalheadernav

Graduate Fellowship Opportunities

LANL supports graduate fellows from the following programs:

- DOE Computational Sciences Graduate Fellowship
- GEM Fellowship Program
- Graduate Fellowships for STEM Diversity
- NNSA Laboratory Residency Graduate Fellowship
- NNSA Stewardship Science Graduate Fellowship
- Nuclear Nonproliferation International Safeguards Fellowship

- Recruitment and retention mechanism for LANL Student Programs
- Emphasis on diversity advancement
- Support academic, research, and professional advancement of STEM graduate students
- Benefits:
  - Tuition and required fees covered
  - Internship, practicum, or residency with participating national laboratories
  - Salary, stipend, or both
  - Ability to conduct thesis/dissertation research with employer
  - Eligible for travel reimbursement

Contact: Matthew Pacheco, Fellowship Program Coordinator, mlpacheco@lanl.gov

Contact: Angelica Lopez, Program Manager, Student Programs Office, angelical@lanl.gov

Go For Scholarships!

- Big reason I Graduated with no Student Debt!
- Plenty of opportunities out there!

Stay in Contact with Your Professors

Dr. Dawan

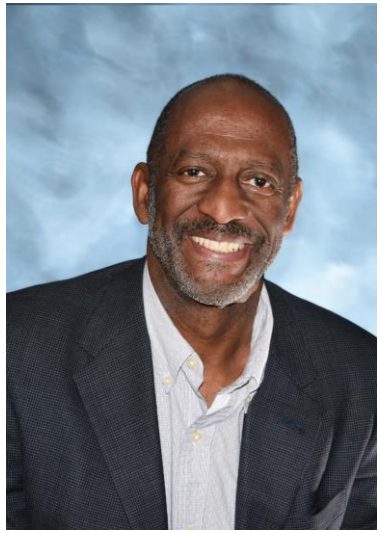
Dr. Jerro

Dr. Krosby

Dr. Mensah

Dr. Akwaboa

Dr. Kodiyalam



Dr. Blevins

Summary and Future Goals

- Things could’ve went smoother to getting to this point.
- Life doesn’t always go as planned. Be adaptable.
- Interested in performing more hands-on work in the lab.
- Thinking of obtaining my Ph.D. through the lab.

THANK YOU FOR YOUR TIME!
Q & A