

Science Undergraduate Laboratory Internships (SULI)

Summer 2022 - Application for: Nicholas Joseph Murray

APPLICANT PROFILE

General Applicant Information

First Name: Nicholas

Middle Name: Joseph

Last Name: Murray

Previous Last Name(s):

Primary Email Address: nmurray9@vols.utk.edu

Alternate Email Address 1: mermacorn10@gmail.com

Alternate Email Address 2:

ORCID: [0000-0003-0867-167X](https://orcid.org/0000-0003-0867-167X)

Current Address

Primary Phone Number: 865-385-7725

Alternate Phone Number:

Citizenship/Languages/Eligibility Information

I will be 18 years of age or older by the time the internship begins: Yes

Are you a U.S. Citizen? Yes

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Summer 2022 - Application for: Nicholas Joseph Murray

EDUCATIONAL BACKGROUND

Academic Information

Are you currently attending a community college or 2-year college?

No

Current academic status:

Freshman

If you are selected as a participant in this DOE program, will you receive academic credit from your university/college for participating?

No

Undergraduate Institution Information

College/University Country: United States and U.S. Territories

College/University State/Province/Territory: Tennessee

College/University Name: University of Tennessee, Knoxville

College/University Address: 1331 Circle Park Drive

College/University City: Knoxville

College/University Zip Code: 37996-0001

Expected/Declared Major: Engineering - Nuclear

Minor and/or Concentration Expected/Declared: Mathematics

Expected Degree From This College/University: Bachelor's

Expected/Completed Graduation Date: May / 2025

Transcript: Nicholas Murray University of Tennessee Knoxville Transcript Freshman Semester 1.pdf

Does this institution provide grades? Yes

GPA Scale: 4.0

Total Attempted Credits: 13.00

Total Earned Credits: 13.00

Total Quality Points: 52.00

GPA: 4.00

Science Undergraduate Laboratory Internships (SULI)

Summer 2022 - Application for: Nicholas Joseph Murray

Science, Technology, Engineering and Mathematics (STEM) Courses

Course Title: Calculus I - IB Credit

Course Number: MATH 141

Enrollment Status: Recently Completed

Course Title: Computer Methods in Engineering Problem Solving

Course Number: EF 105

Enrollment Status: Recently Completed

Course Title: Elements of Physics I - IB Credit

Course Number: PHYS 221

Enrollment Status: Recently Completed

Course Title: Elements of Physics II - IB Credit

Course Number: PHYS 222

Enrollment Status: Recently Completed

Course Title: General Chemistry I - IB Credit

Course Number: CHEM 122

Enrollment Status: Recently Completed

Course Title: General Chemistry I Lab - IB Credit

Course Number: CHEM 123

Enrollment Status: Recently Completed

Course Title: General Chemistry II - IB Credit

Course Number: CHEM 132

Enrollment Status: Recently Completed

Course Title: General Chemistry II Lab - IB Credit

Course Number: CHEM 133

Enrollment Status: Recently Completed

Course Title: Honors: Calculus II

Course Number: MATH 148

Enrollment Status: Recently Completed

Course Title: Honors: Calculus III

Course Number: MATH 247

Science Undergraduate Laboratory Internships (SULI)

Summer 2022 - Application for: Nicholas Joseph Murray

Enrollment Status:	Currently Enrolled
Course Title:	Honors: Physics for Engineers I
Course Number:	EF 157
Enrollment Status:	Recently Completed
Course Title:	Honors: Physics for Engineers II
Course Number:	EF 158
Enrollment Status:	Currently Enrolled
Course Title:	Introduction to Abstract Mathematics
Course Number:	MATH 300
Enrollment Status:	Currently Enrolled
Awards or Honors	
Award Title:	NCSM Excellence in Mathematics Award,
Month & Year Received:	May / 2021
Awarding Institution:	West High School
Award Title:	Most Outstanding Science Student
Month & Year Received:	May / 2021
Awarding Institution:	West High School
High School Graduation or GED	
Date of High School Graduation or GED:	May / 2021
Country:	United States
City:	Knoxville
State/Province/Territory:	TN

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WORK EXPERIENCE & SKILLS

Work Experience

Name of Place of Employment or Activity:	Joint Institute of Advanced Materials (JIAM)
Dates of Employment or Activity:	From 10/18/2021 To Present
Hours Per Week:	10.0
Primary Duties:	Designing polishing procedures for carbon-fiber samples Performing polishing procedures
Tasks Performed:	<p>I mount samples onto mounting pucks using heat activated crystal bond. This is done using a hot plate to heat the crystal bond, a thermometer so the temperature does not reach above a threshold, tweezers to hold the sample, and a water tin to cool the mounting puck before polishing.</p> <p>I polish samples. This is done using a sample presser to have a consistent evenly distributed force pressing down on the sample, a sample polisher, polishing paper with different grits for different points in the polishing process.</p> <p>I verify the integrity of samples and the quality of polish. This is done using an electron microscope that can observe the sample with enough detail to identify scratches and measure the thickness of the sample at different points in the process.</p> <p>I meet with my research supervisor to discuss what I've noticed in various procedures and to give suggestions for future attempts.</p>

Professional Associations

Are you a member of any professional organizations?	No
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Computer Skills

Computer related skills:	<p>Adept in Microsoft Office</p> <p>Proficient in MATLAB</p> <p>Proficient in Python</p>
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Laboratory/Technical Skills

Experience with advanced laboratory techniques or equipment:	Proficient using an electron microscope
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PROGRAM INFORMATION

Eligibility

Have you previously participated in 2
SULI appointments? No

Previous DOE Internship/Fellowship Experience

Have you ever had an
internship/fellowship with the
Department of Energy or any of its
National Laboratories? No

Availability

What is the earliest date you can
begin your internship? 6/6/2022

When do you need to complete your
internship? 8/15/2022

First Choice Host DOE Laboratory

DOE Laboratory: Oak Ridge National Laboratory (ORNL)

First Choice Research Area: Engineering Nuclear

Second Choice Research Area: Mathematics

Third Choice Research Area: Nuclear Physics

Second Choice Host DOE Laboratory

DOE Laboratory: Thomas Jefferson National Accelerator Facility (TJNAF)

First Choice Research Area: Nuclear Physics

Second Choice Research Area: Mathematics

Third Choice Research Area: Accelerator Physics/Science

Relatives Employed at DOE Laboratories

Are you a relative of an employee at
the proposed host DOE laboratories? No

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ESSAYS

Research Experience:	<p>I have been lucky enough to have fairly extensive research experience in my high school and college careers thanks to a curriculum that emphasizes research in the sciences, and a research assistant position at the Joint Institute for Advanced Materials (JIAM)</p> <p>In High School, as part of the International Baccalaureate (IB) Diploma Programme, I had independent research papers in physics and chemistry. In both sciences, I designed my own experiments and evaluated the results using previous scientific context. My chemistry experiment involved using spectrometry to evaluate the effectiveness of different methods of blocking blue light such as blue light glasses. In physics, I compared the albedo of different colored materials by measuring the temperature and calculating the albedo from the Stefan-Boltzmann Law. Both experiments had nearly full independence with a strict limit placed on the input from the instructor by the IB Organization. In spite of this short time-frame and limited help from instructors, my experiments worked as intended, and I achieved top marks on my papers. Through this I learned how to evaluate sources and to understand scientific concepts both quickly and thoroughly because I was working on a short time-frame.</p> <p>In my first semester of college, I got a job as a research assistant at JIAM. This was largely working with my research supervisor to create a resource efficient method of producing a polished carbon fiber sample of 40 microns or lower, which is thinner than a sheet of paper. Throughout the process, my research supervisor and I worked together to come up with ideas to reach such a fine thickness, and I would perform the process we came up with in our meetings. Reading the theory was an important part of this process for me to understand the process of polishing the sample, and it allowed me to contribute more as the meetings continued over time. We found a procedure that worked to give consistent results that involved using a mesh to reduce the shearing on the sample as the thickness got lower. Through this, I learned that in order to work alongside researchers with years of experience it is critical to remain well-informed on the basics of a field and the current research.</p>
Research Interests:	<p>There were a wide variety of factors involved in my choice of lab including projects currently being worked on, possibility of nuclear research, and the available technology at the lab. These criteria landed me with the Oak Ridge National Laboratory (ORNL) and the Thomas Jefferson National Accelerator Facility (TJNAF).</p> <p>Growing up in Knoxville, ORNL is a lab I have heard about all of my life. From its contribution to World War 2 in the Manhattan Project to today when it is still doing cutting-edge research in nuclear fusion, it is no wonder it is talked about so much. My main area of interest that is unique to ORNL is Nuclear Fusion. Climate change has been on my mind for quite a long time, and I believe that Nuclear energy will have to be a part of our move away from fossil fuels. Nuclear fusion has the potential to get rid of the radioactive waste often associated with nuclear fission, which is why I want to contribute to the research going on related to fusion. I think the possibility of nuclear energy with no waste could ease the fear many people have in regard to nuclear energy, and we could help to mitigate the damages of climate change.</p> <p>My other areas of interest fall into the research of both ORNL and TJNAF: nuclear physics and supercomputing. I have been working in materials in a lab at the microscopic level, and I am interested in gaining an understanding of materials at an atomic level. Neutron sciences at ORNL is in the pursuit of understanding materials specifically in relation to neutron scattering. At TJNAF, I would be interested in how the particles actually work using an accelerator or an electron injector in order to understand the building blocks of materials. The other form of research that both labs possess is their supercomputers, which interest me because I have heard from researchers that the importance of computing in research is ever increasing especially in expensive fields like nuclear engineering and physics, and I am interested in getting exposure to that type of research.</p> <p>ORNL and TJNAF both have facilities relating to nuclear physics and engineering that interest me greatly, and I hope to gain exposure to these fields through the SULI Program.</p>
Personal Experience:	<p>Mathematics is the bedrock of how we communicate real-world phenomena. From childhood, the subject has always held a significant interest for me, and this has continued into my high school and college life through ample self-study and reading of important concepts in the field.</p> <p>My serious pursuit of math began with my participation in the International Baccalaureate (IB) Diploma Programme in high school. The Higher Level math course I took covered a wide variety of topics at a basic level from combinatorics to differential equations. This gives me a familiarity with certain strategies used to derive equations when I am learning new topics in any scientific context. For example, in my "Honors: Physics for Engineers" class they would often demonstrate the differential equations method of deriving various kinematic equations. I found this helped immensely with my understanding of the class. My coverage of various math topics has helped me identify the math within science topics enhancing my understanding of the subject. This will benefit me as a member of the SULI Program because there will likely be topics I need to learn quickly and having some mathematical base for them will help me understand quickly.</p> <p>My ability to self-study began with learning the fundamentals of differential calculus on my own in high school. I initially did it because I was genuinely curious about finding instantaneous velocity in physics and how one goes about that at a basic level, but I learned how to achieve understanding of a subject with only a textbook. A good</p>

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example of this is in the sample problems of a math textbook; I have found that attempting problems prior to reading the solution allows me to see my mistakes and genuinely learn the proper logic involved in a problem. This self-learning has continued with me as I have begun to read more extensively about physics and math and has allowed me to gain understanding early in classes. If I don't understand, I know how to fill the gaps in my knowledge. This will be useful in the SULI program because I will be learning a lot in a short period of time, so I am well practiced at learning new information quickly, which will benefit in the research process because a certain level of understanding is necessary to perform any kind of research.

Professional Goals:

Thinking back to when I was a child, my ambitions have always been in the fields of math and science. I didn't know exactly where those ambitions would take me, but over the years I have realized that being a professor in either mathematics or engineering is the ideal position for me.

In my eyes, there are two major roles of professors in science: performing actual research and guiding the next generation of scientists. I have had some experience with both research and teaching in my life. I have been intimately part of the design of procedures in the Joint Institute of Advanced Materials at UTK, and helping my classmates understand various concepts in both math and physics has been a joy of mine since I was learning basic arithmetic. The SULI program will provide me with insight into the research of nuclear scientists specifically because that is my main area of interest in engineering. This will allow me to familiarize myself with the technology and techniques used by nuclear engineers on a daily basis. It will also help me learn about the scientific concepts of nuclear physics itself because as of yet, I have not taken a class in this subject. It will also give me exposure to mathematics in the laboratory, which will assist in my choice of field, and will give me good insight into the job of applied mathematicians. These insights will help with the teaching as well. As I learn more about methods of research, I can take those lessons learned through the SULI program and teach them to my students when I become a professor. People often discount the teaching that professors do because of the emphasis on research, but I believe the teaching is a catalyst for inspiring students to do research and pursue subjects they love. Spreading the lessons I learn from SULI with students will only help them pursue the important job of research. I have already seen this in action because a professor at Nuclear Engineering picnic at my university recommended we all apply for SULI because of what he learned doing the program himself.

The SULI program will give me valuable experience in nuclear engineering and physics research, so I can bring those lessons to others on my path to becoming a professor.

RECOMMENDATIONS

Recommendation 1:

First Name: Christopher
Last Name: Beatty
Email: beattyca@ornl.gov
Status: Received 1/9/2022

Recommendation 2:

First Name: Vivek
Last Name: Chawla
Email: vchawla@vols.utk.edu
Status: Received 1/5/2022

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TELEPHONE: 865-974-2102

Official Academic Transcript of:
NICHOLAS JOSEPH MURRAY
Transcript Created: 4-Jan-2022



Document Type: THIRD-PARTY SECURE PDF

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THE UNIVERSITY OF TENNESSEE KNOXVILLE
ACADEMIC TRANSCRIPT

Murray, Nicholas Joseph

01/05/2022

1

FALL SEMESTER 2021		Tickle College of Engineering			
EF	105	Comput Meth/Engr Prob Solving	1.00	U	A
EF	157	Honors: Physics/Engineers I	4.00	U	A
ENGL	198	Chancellor's Honors Writing I	3.00	U	A
FYS	101	The UT Experience	1.00	U	A
MATH	148	Honors: Calculus II	4.00	U	A

SEMESTER 2021		Tickle College of Engineering				
CHEM	122	General Chemistry I	IB	3.00	U	S
CHEM	123	General Chemistry I Lab	IB	1.00	U	S
CHEM	132	General Chemistry II	IB	3.00	U	S
CHEM	133	General Chemistry II Lab	IB	1.00	U	S
ENGL	101	English Composition I	IB	3.00	U	S
MATH	141	Calculus I	IB	4.00	U	S
MATH	LD	Math Analysis	IB	4.00	U	S
PHYS	221	Elements of Physics I	IB	4.00	U	S
PHYS	222	Elements of Physics II	IB	4.00	U	S
REST	LD	World Relig	IB	3.00	U	S

Cumulative:

U Att: 13.00 Earned: 43.00 Qpts: 52.00 GPA: 4.00

MEMORANDA

High School: West High School
HS Address: Knoxville TN 37919
HS Date Grad: 05/2021

END OF TRANSCRIPT




Jeff Gerkin
Interim University Registrar

THE UNIVERSITY OF TENNESSEE, KNOXVILLE, OFFICE OF THE UNIVERSITY REGISTRAR
209 STUDENT SERVICES BLDG, KNOXVILLE, TN 37996

ACCREDITATION - Since 1897, UT has been continuously accredited by the Southern Association of Colleges and Schools.

CALENDAR SYSTEMS – All course work completed prior to Fall Semester 1988 is under the quarter system. College of Law course work completed after Spring Quarter 1981 is under the semester system.

GRADING SYSTEM

GRADE	INTERPRETATION	UG PRIOR TO FALL 2008	UG FALL 2008	GR PRIOR TO FALL 2016	GR FALL 2016
A	Superior	4.0	4.0	4.0	4.0
A-	Intermediate Grade	N/A	3.7	N/A	3.7
B+	Very Good	3.5	3.3	3.5	3.3
B	Good	3.0	3.0	3.0	3.0
B-	Intermediate	N/A	2.7	N/A	2.7
C+	Fair	2.5	2.3	2.5	2.3
C	Satisfactory	2.0	2.0	2.0	2.0
C-	Unsatisfactory	N/A	1.7	N/A	N/A
D+	Unsatisfactory	N/A	1.3	N/A	N/A
D	Unsatisfactory	1.0	1.0	1.0	1.0
D-	Unsatisfactory	N/A	0.7	N/A	N/A
F	Failure	0.0	0.0	0.0	0.0
I	Incomplete	0.0	0.0	0.0	0.0
	Incomplete grade computed as failure for undergraduates prior to fall semester 1988				
	Incomplete grade computed as failure for graduate students prior to fall quarter 1976.				
WF	Withdrew failing	0.0 (discontinued as failing grade fall 2008)			
X	Exam missed	0.0 (discontinued fall 1975)			

The following grades or notations are used by the university, however, these do not earn quality points and are not used in GPA calculations.

GRADE	EXPLANATION
Aud	Audit (courses not recorded on academic record effective fall 1982.)
Blank	No report
CR	Credit earned grade-represents a grade of C-, D+, D, or D-. Spring 2020 only.
H	Satisfactory honors grade-satisfactory grade that equates to A or B for law and vet med students.
IW	Incomplete due to writing deficiency
N	No progress
NC	No credit-represents a standard of C-, D+, D, D-, F; spring 2020 only represents standard grade of F for undergraduates.
NC Grade	NC-,ND+, ND, ND-, NF, no credit grades-represents a standard of C-, D+, D, D-, F
NG	No grade
NP	No progress or inadequate progress
NR	Non-reported grade
P	Progress (progress toward completion of a thesis or dissertation)
S	Satisfactory (equates to A, B, or C for undergraduates; equates to A or B for graduate students)
SI	Incomplete grade for a course graded satisfactory/no credit
W	Withdrawn
WP	Withdrew passing
WF	Withdrew failing (effective fall 2008)
(*)	Repeated course-All attempted and earned hours and quality points for the course are excluded from the cumulative totals.
(#)	Repeated course-All earned hours for the course are subtracted from the cumulative totals.
IC	Incomplete grade for courses graded A, B, C, no credit grade
CI	Incomplete grade for courses graded S/CR/NC

GRADES FOR COLLEGE OF LAW-Effective fall semester 2006, the College of Law awards numerical grades and grades of satisfactory/no credit. Numerical grades are reported in 0.1 increments with 0.0 being the lowest possible grade, 0.8 the lowest passing grade and 4.3 the highest grade possible. Grades of 4.1-4.3 are considered to reflect extraordinary performance. Grade point averages will be rounded to the nearest tenth point by the college when determining class rank and honors distinctions although the official university transcript reflects averages rounded to the hundredth decimal place.

CREDIT LEVEL AND NUMBERING SYSTEM

U-Undergraduate level courses numbered 100(0) – 400(0)
G-Graduate level courses numbered 500(0) and 600(0)
L-Law level courses
V-Veterinary Medicine level courses
S or R in the course number signifies a service or research course
N in the course number signifies an internship course

TRANSFER POLICY-(Effective fall quarter 1985)-Transfer hours are counted for degree programs but are not computed in the UT grade point average for courses transferred after summer quarter 1985.

GOOD STANDING-Unless otherwise noted by 'ACADEMIC DISMISSAL' student is in good standing and eligible to enroll.

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SULI PROGRAM APPLICATION RECOMMENDATION FOR NICHOLAS JOSEPH MURRAY

Recommender Contact Information

- **First Name:** Vivek
- **Last Name:** Chawla
- **Title:** NA
- **Department:** Material science
- **Institution/Organization:** University of Tennessee
- **Telephone:** 315-800-8228
- **Email:** vivekchawla14@gmail.com

Applicant Information

Association

Describe your relationship to the applicant, including how long you've known the applicant, where, and in what capacity.

It has been my pleasure to work with Nicholas Murray for past four months. I work in Composite Manufacturing and testing group at University of Tennessee. Nicholas has been working within the group for past four months. He has been working in his capacity as an undergraduate research assistant and has been performing with up most professionalism. Nicholas was brought in the group to assist in preparing samples for Nano scale Interfacial testing of composites. His direct responsibilities involved, concocting the methodology for preparation of composite thin films via polishing.

Applicant Comments

Please provide substantive comments about the applicant's education, training, aptitude, or promise relevant to the SULI program. Include any relevant additional detail or perspective regarding the applicant's research experience or equivalent experience on complex projects, including the level of independence or other factors that would contribute to the applicant's ability to make an excellent contribution to the SULI program.

In my experience with Nicholas, I have concluded that he is an analytical thinker with a high aptitude and a natural affinity of following the scientific method. During his time with in the group he has always been punctual, polite yet not afraid to voice his ideas. He has been responsible for coming up with methodologies to make samples for Nano-scale testing of composite interfacial strength. To understand the magnitude of this problem, there are very few studies done in literature who has been able to prepare these samples via polishing as there are many parameters that one needs to take in consideration.

Nicholas approached the problem preparing multiple samples at a time while changing only one parameter for each of the sample to understand the effect of different parameters. Perhaps, a long approach but one that yielded highest productivity. Not only with in few months of him working within the group, we are able to prepare the samples required but we also understand the effects of different parameters and hence have the ability to make different kinds of samples depending upon the material involved.

He has shown excellent promise and I highly recommend him for SULI program.

Applicant Rating

In comparison to other undergraduate students, please rate the applicant relative to his/her peers on the following qualifications:

	Do Not Know	Below Average	Average	Above Average	Superior
Analytical and Mathematical	X				
Experimental Research					X
Overall Academic	X				
Initiative and Self Reliance					X
Motivation toward Scientific Career					X
Originality of Thought					X
Emotional Maturity					X
Ability to Work with Others					X
Potential for Leadership					X
Oral Communication Skills					X
Written Communication Skills	X				

SULI PROGRAM APPLICATION RECOMMENDATION FOR NICHOLAS JOSEPH MURRAY

Recommender Contact Information

- **First Name:** Christopher
- **Last Name:** Beatty
- **Title:** Chief Operations Officer
- **Department:** Fusion and Fission Energy and Science Directorate
- **Institution/Organization:** Oak Ridge National Laboratory
- **Telephone:** 256-679-5757
- **Email:** beattyca@ornl.gov

Applicant Information

Association

Describe your relationship to the applicant, including how long you've known the applicant, where, and in what capacity.

I first met Nicholas Murray through my interactions with West High School in February 2021 where my organization the 100 Black Men of Greater Knoxville Inc presents a Black History Month Program for the school. Nicholas was one of then attendees. Along with this program was an opportunity for a scholarship which Nicholas took advantage of and subsequently was awarded. Ever since then I have kept in touch with Nicholas discussing things such as the type of classes he should take during his freshman year at the University of Tennessee, connecting him with researchers at ORNL, to available opportunities, such as SULI, that he should consider. Ever since we met, I have been an advisor and mentor for Nicholas, and I see this relationship continuing for the foreseeable future. Nicholas is a bright and gifted young man with a plan for his life that he is executing, and I hope to play some small role in helping him execute his plan.

Applicant Comments

Please provide substantive comments about the applicant's education, training, aptitude, or promise relevant to the SULI program. Include any relevant additional detail or perspective regarding the applicant's research experience or equivalent experience on complex projects, including the level of independence or other factors that would contribute to the applicant's ability to make an excellent contribution to the SULI program.

Nicholas is a 2021 graduate of West High School with a 4.0 GPA. Nicholas is currently enrolled at the University of Tennessee Knoxville where he is studying Nuclear Engineering. Nicholas knew that this is what he wanted to do so he prepared himself. He enrolled in college prep courses taking physics, chemistry, calculus as well as other academically challenging courses. He was a member of the National Honor Society, serving as one of its officers, as well as the Boy Scouts of America, Key Club, Future Educator Leader Academy, and many others. Nicholas looks for opportunities that would contribute to his future success. During the scholarship evaluation process and interactions after that I got to learn a little more about Nicholas. It was clear on paper that he was a very academically sound young man- from his stellar 4.0 GPA, advance classes that he took as well as the numerous clubs and activities he participated in such as the Boy Scouts of America and the National Honor Society. I got to learn more about his social consciousness through his scholarship essay for which the topic was "If Dr. Martin Luther King were alive today what would he say about what we have learned about racial diversity in the year 2020 and what we need to do to get better." I was impressed by his self-awareness as well as his awareness to the topic. I was also impressed by his desire to study Nuclear Engineering in college with a hope to learn more about Nuclear Fusion. This desire stuck a chord with me as I am the COO for the Fusion and Fission Energy and Science Directorate at the Oak Ridge National Laboratory (ORNL). Nuclear Engineering and Fusion is what we do. Evaluating him during the scholarship contest and eventually getting to know his academic promise became very clear to me. His participation in keeping our relationship going shows me a level of maturity and forward looking that is not commonly found in someone of his years. He has demonstrated his critical thinking skills through our many interactions. I believe that someone like Nicholas is exactly what the Science Undergraduate Laboratory Internship (SULI) is looking for. I

not only believe that SULI would be an asset for Nicholas, but that Nicholas will be an asset for SULI. Accepting Nicholas into this program SULI will get the opportunity to participate in the future success of this young man and his future success will cast a great light on the SULI program I am very eager to offer this recommendation for Nicholas Murray and if you have a further question, please feel free to contact me.

Sincerely

Christopher Beatty

Chief Operations Officer, Fusion and Fission Energy and Science Directorate

Oak Ridge National Laboratory

beattyca@ornl.gov

Applicant Rating

In comparison to other undergraduate students, please rate the applicant relative to his/her peers on the following qualifications:

	Do Not Know	Below Average	Average	Above Average	Superior
Analytical and Mathematical					X
Experimental Research	X				
Overall Academic					X
Initiative and Self Reliance					X
Motivation toward Scientific Career					X
Originality of Thought					X
Emotional Maturity					X
Ability to Work with Others				X	
Potential for Leadership					X
Oral Communication Skills					X
Written Communication Skills					X