NASA/Ohio Space Grant Consortium
Lenell Allen Visits Cleveland!
August 3, 2016

Featured from left to right:
Dr. M. David Kankam, Howard McKinney, Dr. Lenell Allen, James Timotiwu, Emilio Borges, Ernestina Schirmer, and Dr. Jed Marquart
Lenell Allen Visits Cleveland!

- OSGC Glenn Summer Interns had an opportunity to share their research experiences with Dr. Lenell Allen who was visiting Cleveland.

- **First time** community college students were selected at Glenn and supported by OSGC!
Jed E. Marquart, Ph.D., P.E., is the new Director of OSGC. Ohio Northern University is his home university.
OSGC – About

- Original Charter Member – National Space Grant Fellowship and Scholarship Program
- “Designated” Space Grant Status
- Personnel:
  - Jed E. Marquart, Ph.D., P.E., Director
  - Laura A. Stacko, Program Manager
  - Timothy M. Hale, Program Assistant
- Lead Institution:
  - Ohio Aerospace Institute (OAI)
  - Cleveland, Ohio
Map of OSGC Affiliates

OAI
Cleveland, OH
Affiliates – Universities

- Air Force Institute of Technology
- Case Western Reserve University
- Cedarville University
- Central State University (MSI)
- Cleveland State University
- Kent State University
- Marietta College
- Miami University
- Ohio Northern University
- The Ohio State University
- Ohio University
- The University of Akron
- University of Cincinnati
- University of Dayton
- The University of Toledo
- Wilberforce University (MSI)
- Wright State University
- Youngstown State University
Affiliates – Community Colleges

- Cincinnati State Technical and Community College
- Columbus State Community College
- Cuyahoga Community College (3 Campuses)
  - Eastern Campus
  - Metropolitan Campus (MSI)
  - Western Campus
- Lakeland Community College
- Lorain County Community College
- Owens Community College
- Sinclair Community College
- Terra Community College
Other Partners

- NASA Glenn Research Center
- Air Force Research Laboratory
- Industry Partners
- Community Outreach:
  - Cincinnati Observatory
  - Drake Planetarium & Science Center
  - iSPACE
NASA Internships, Fellowships and Scholarships (NIFS)
- Internships (with NASA Centers, universities, and industry) ~ 10 annually
- Fellowships and Scholarships (STEM disciplines; primarily Engineering) ~ 60–65 annually
- Graduate Fellowships
  - Master’s
  - Doctoral
- Scholarships
  - Undergraduate (Juniors and Seniors)
  - Community College
  - Education (Pre–Service Teachers – Seeking K–12 Science and Math certification)
Student Internships – Summer, 2016

- NASA Internships:
  - NASA Glenn Research Center – 4 community college students – first time!
    - Emilio J. Borges, Computer Science and Engineering Lorain County Community College
    - Howard McKinney*, Mechanical and Electrical Engineering, Cuyahoga Community College
    - Ernestina Schirmer, Mechanical Engineering Technology, Cincinnati State Technical and Community College
    - James Timotiwu, Pre-Engineering, Cuyahoga Community College
  - NASA Academy at Marshall Space Flight Center
    - Kevin M. Bradner, Senior, Computer Science, Case Western Reserve University

*Howard was recently selected for NASA’s National Community College Aerospace Scholar (NCAS) Program and is heading to Stennis soon!
NASA Internships – Summer, 2016

With Administrator Bolden!
From Intern Howard McKinney (on the right):

“Unbelievable!!! This was my seventh grade Science Teacher, Mr. Blakeman, who works for NASA now burning prairie grass. I met him on the NASA Plum Brook tour. Brought back lots of memories, and I never knew he worked here. Was my favorite teacher. Thank you, NASA!!!”

Plum Brook Station is a remote test facility for the NASA Glenn Research Center located on 6,400 acres in the Lake Erie community of Sandusky, Plum Brook is home to three world-class test facilities, which perform complex and innovative ground tests for the international space community.
University Research:

- Central State University (MSI)
  - Damon M. Harper
  - Chayla Tillman
- Ohio Northern University
  - Ian M. Brown
  - Rebekah G. Douglass
Industry Internship:

- Skyward Ltd., Dayton, OH
  - Jeremy J. Lee, Graduate Student, Renewable and Clean Energy Engineering, Wright State University

“I did post processing of 3D scanned objects, this ranged from scanning commercial products to reverse engineering and modifying them; I also did metrology grade measurements of military aircrafts that had been damaged with warheads.”
Major Student Programs – NIFS

- Scholarships and Fellowships have a research component with faculty mentor
- All awardees present their research at Annual Student Research Symposium held at OAI – 25th Symposium to be held in 2017!
  - Juniors, Education, and Community College scholars present posters
  - Seniors and Graduate Fellows present PowerPoint presentations are evaluated and students receive feedback
- Career Fair with industry and NASA Glenn Human Resources

OSGC scholar Rebekah Douglass (Ohio Northern University) presents her research

DeGrafth Palmore (The University of Akron) discusses his research with former OSGC scholar Aimee Bognar (now a NASA Glenn Civil Servant)
Major Student Programs – NIFS Education Scholars

- Create Education Project/Lesson Plan with faculty mentor
- NASA Glenn workshop; access to educational materials; Post-Workshop evaluations:
  - I was overall amazed by this workshop. I gained so much information and am very excited to use NASA resources in my future classroom.
  - Activities were fun, and I enjoyed the Mars theme. I wish more future teachers could experience this workshop.
  - I found the workshop to be very valuable and useful!
24th Annual Student Research Symposium (April 1, 2016)

University of Akron Lunabotics Team and Christee the Robot

Student Presentations
Reconnecting with my former student and OSGC scholarship recipient Brian Tomko, now a Glenn Civil Servant
Major Student Programs – NIFS

2016 Symposium Group Photo
Major Student Programs

- Higher Education
  - Additional 100–200 students receive support through hands-on projects at their universities

- Demographics of student awards:
  - >21% underrepresented minority students
  - >40% female
Former OSGC Students

- Longitudinal Tracking:
  - Each student completes an Exit Form
  - 50% go on to graduate school
  - 50% enter the world of work
  - 98% remain in STEM

Robert Knapke, Doctoral Hooding, University of Cincinnati

Derick Endicott
Test Engineer at SpaceX
Waco, Texas | Aviation & Aerospace
Previous: University of Cincinnati, Universal Technology Corporation, Ohio Northern University
Education: University of Cincinnati

Ashlie Flegel
Aerospace Engineer at NASA Glenn Research Center
Cleveland/Akron, Ohio Area | Defense & Space
Current: NASA Glenn Research Center
Previous: NASA Glenn Research Center, Jacobs Technology, The University of Toledo
Education: Cleveland State University

Joshua Allen
Computer Engineer at NASA Glenn Research Center
Cleveland/Akron, Ohio Area | Defense & Space
Previous: Wilberforce University, SAIC
Education: Cleveland State University
Some recently funded student projects

- Ohio Northern University Engineering students build a replica ‘Moon Buggy’ for the Armstrong Air & Space Museum in Wapakoneta, Ohio
- For additional information: http://www.onu.edu/front/one_giant_leap_for_onu
- To view a cool video:
Some recently funded student projects

- Lunabotics teams at Akron/Miami/Wright State
- High-altitude balloon research (Central State/Dayton/Miami/Wright State/LCCC)
- Smart Unmanned Aerial Vehicle for Exploration Team (SUAVE) at The University of Toledo

Miami University Lunabotics Team
The University of Toledo SUAVE Team
The University of Akron Lunabotics Team
Some recently funded student projects

- “Bad News Bears,” Society of Automotive Engineers (SAE) Aero Design Team at Ohio Northern University
- Project High Flight at Miami University
- Underwater Robotics Team at The Ohio State University
- National SG Eclipse Project – Knox County students
Some recently funded student projects

- Regional and National Rocket Competitions (U Cincinnati, Lorain County CC, Ohio State)
- IED Detection (Ohio State)
- Accuracy of a New Mechanical Response Tissue Analysis (MRTA) Device (Ohio University)
Faculty Opportunities

- Seed grants to faculty
- Funding for the SIERRA UAV–Fire–fighting project (University of Cincinnati)
- Curriculum Innovation– To create and modify curriculum to meet changing needs in engineering schools
  - Manufacturing Engineering Program at Wright State
  - Innovation in Aircraft Design at Kent State
University/K–12 Collaborations

- Flight Camp – Dater High School and University of Cincinnati
- Summer programs
  - Camp GEMS (Ohio Northern University)
  - Women in Engineering Summer Camp (University of Dayton)
  - Wright STEPP, pre-engineering summer program
Funding at K–12 Level:

- Mini-grants to K–12 teachers (typically $500–$1,000)
- Support teacher professional development
- Community outreach projects
  - iSPACE – Cincinnati, Science Olympiad – Cleveland, FIRST Robotics, Cincinnati Observatory Star Gazers, Young Astronaut Girls in Columbus, Dayton TechFest, Super Science Saturdays at King Kennedy Community Center
Funding at K–12 Level:

- Support First Robotics – FIRST® Robotics Competition Buckeye Regional
Awarded Additional NASA Funding

- NASA funding for CC–STARS! (Community College – STEM Training and Retention of Students – $500K (over 2 years + NCE)
  - 1. Scholarship Program
  - 2. Hands-on Team Programs
    - Unmanned Aircraft Systems (UAS) Program
  - 3. Bridge Mentoring Program
Student Successes

- Amada Baluch, Cuyahoga Community College

“This scholarship gave me the drive and financial opportunity to finish my Associate’s degree in Electrical Engineering Technology and begin some of the coursework to move on to a Bachelor’s Degree in Electrical Engineering. It gave me the chance to build and research a microcontroller run hydroponic system, and also lead me to an online learning opportunity with NASA! It was the best opportunity of my college career!”
Awarded Additional NASA Funding

- Bridge Mentoring Program at The University of Toledo

Community College Engineering Transfer Students Lunch/Welcome Event Group Photo
Program Accomplishments

- Awarded more than 1,060 undergraduate scholarships and 160 graduate fellows working toward degrees in Science, Technology, Engineering and Mathematics (STEM) disciplines at OSGC member universities since 1989
- Higher Education – supported over 500 projects impacting over 5,000 direct participants
  - Award 1–2 curriculum seed grants annually
- Research Infrastructure – supported 50 programs with ~500 direct participants through research faculty grants
- Award 10–15 teacher mini–grants annually
Thank You!

Many **thanks** to the Michigan Space Grant Consortium – particularly, Alec and Bonnie – for planning this meeting and hosting us!
Questions????