

# Pierce Edward Cornelius Gordon

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## EDUCATION

**The University of California – Berkeley**

**Masters - PhD Track in the Energy and Resources Group** – Masters expected May 2014

**The University of Michigan**

**Bachelor of Science in Aerospace Engineering** – Summa Cum Laude

**Morehouse College**

**Bachelor of Science in Applied Physics** – Summa Cum Laude

**Minor in Mathematics**

## GRADUATE RESEARCH ENDEAVORS

**Current:** Developing questions, concerns, and topics in human centered design of tangible technological interventions for the multidimensionally poor, and forces which impact success and failure of such projects, including:

- Pedagogy
- Trans-disciplinary design links
- Organizational Structure
- Actor Relationships
- Relationships between designers and the intended community

**Human Needs Project** – Energy Analyst

Developed an energy framework for a multidimensional basic needs facility for the community in Kibera, Kenya, using on the ground interviews and exploratory field research for needs assessment.

**Sherwood Test Prep** – GRE and SAT Test Preparatory Instructor

## UNDERGRADUATE RESEARCH EXPERIENCE

- 1. NASA Institute for Science and Technology (NIST) Summer Intern** SUMMER 2010  
Dr. Aloysius F. Hepp, NASA Glenn Research Center, Cleveland, OH
  - Independently researched and compiled a solar concentrator trade study for in-situ resource utilization (ISRU) based oxygen production.
  - Published and presented a conference paper for the 49th AIAA Aerospace Sciences Meeting in Orlando, FL.
  - Won the National Poster Presentation of the 2011 NSBE Technical Research Exhibition with research findings.
- 2. University of Michigan Summer Research Opportunity Program (SROP) Intern** SUMMER 2009  
Dr. Alec Gallimore, Ann Arbor, MI
  - Developed an antenna array, hardware connections, and data acquisition software for the detection of plasma inconsistencies in Xenon Hall Thrusters.
  - Presented in the Committee on Institutional Cooperation's SROP Conference, which consisted of poster presentations and round-table discussion comparing and contrasting other university's SROP student's research topics.
- 3. MIT Summer Research Program (MSRP) Research Intern** SUMMER 2008  
Dr. Alvar Saenz-Otero, Massachusetts Institute of Technology, Cambridge, MA
  - Developed an attitude control system of autonomous experimental satellites using reaction wheels.
  - Learned extensive theory and applications of control theory, computer programming, dynamics, systems design, and machining skills.
  - Conducted a poster presentation of my research at MIT, at the 2008 NSBE National Convention in Las Vegas, NV, and at multiple poster competitions around the Atlanta University Center.
  - Completed community service by setting up and leading discussions in the Youth Community Design Summit at the Roxbury YMCA, designed for citizens looking to improve their portion of the Boston community.

- 4. Summer Undergraduate Research Fellowship (SURF) Program Research Fellow** SUMMER 2007  
 Dr. Solomon Woods, National Institute of Standards and Technology, Gaithersburg, MD
- Designed a prototype trap detector system for silicon detector efficiency, and set up experiment testing power efficiency of model silicon detectors.
  - Compiled and performed an oral presentation of findings to fellow research interns, NIST research scientists, and colleagues/professors at Morehouse College.
- 5. Research Assistant, Micro/Nano Optics Research & Engineering Laboratory** SPRING 2007-  
FALL 2009  
 Dr. Willie Rockward, Morehouse College, Atlanta, GA
- Researched the impact of terahertz imaging optical systems for future laboratory implementation.
  - Led the research team which wrote multiple laboratory studies to be used in advanced undergraduate optics curricula.
  - Researched laboratory procedures, including set-up and maintenance for the establishment of standard laboratory notebooks.
  - Aided in setup and maintenance of laboratory settings for use in future research.

## PUBLICATIONS AND PRESENTATIONS

### Publications

Gordon, P. E. C., Colozza, A. J., Hepp, A. F., Heller, R. S., Gustafson, R., Stern, T., et al. (2011). Thermal Energy Process Heat for Lunar ISRU: Technical Challenges and Technology Opportunities. *49th AIAA Aerospace Sciences Meeting* (pp. 1-22). Orlando, FL: AIAA. doi: AIAA 2011-704. NASA/TM-2011-217114.

Gordon, P. E. C. (2008). *SPHERES Control of Attitude Control System using Reaction Wheels*. *Control* (pp. 1-11). Cambridge, MA. Retrieved from <http://ssl.mit.edu/spheres/papers.html>.

### Presentations

Gordon, P. E. C. *Thermal Energy Process Heat for Lunar ISRU: Technical Challenges and Technology Opportunities*. (AIAA 2011-704): Poster, presented at NASA Glenn Research Center, Cleveland, OH, August 2010, and NSBE National Technical Research Exhibition, St. Louis, MO, April 2011; Oral, presented at AIAA Aerospace Sciences Meeting, Orlando, FL, Jan. 2011, and NSBE National Technical Research Exhibition, St. Louis, MO, April 2011.

Gordon, P. E. C. *Electromagnetic Characterization of Xenon Hall Thruster Ion Dynamics*. Poster, presented at Committee on Institutional Cooperation's SROP Conference, Ann Arbor, MI, Jul. 2009, and Department of Science and Mathematics Interdisciplinary Conference, Morehouse College, Atlanta, GA, November, 2009.

Gordon, P. E. C. *Attitude Control System using Reaction Wheels and SPHERES*. Poster, presented at MIT Summer Research Program Poster Presentation Conference, Cambridge, Ma, Aug. 2008, and Clark-Atlanta University Undergraduate Poster Competition, Atlanta, GA, Sept. 2008, and NSBE National Convention Undergraduate Technical Poster Competition, Las Vegas, NV, Apr. 2009.

Gordon, P. E. C. Trap Detector Research at the Low Background Infrared (LBIR) Laboratory. Oral, presented at NIST SURF Program End-of Summer Presentation, Gaithersburg, MD, Aug. 2007, and Morehouse College Oral Research Presentation, Atlanta, GA, Oct. 2007.

## AWARDS, HONORS, FELLOWSHIPS, SCHOLARSHIPS

|  |                        |
|--|------------------------|
| UC Berkeley Chancellor's Fellow                                    | SPRING 2011            |
| NSF Graduate Research Fellow                                       | WINTER 2011            |
| University Honors, The University of Michigan                      | WINTER 2011            |
| Dean's List, Morehouse College AND The University of Michigan      | FALL 2006- SPRING 2011 |
| Most Outstanding Dual Degree Student, AUC DDEP Banquet             | SPRING 2012            |
| 1 <sup>st</sup> Place, NSBE National Technical Research Exhibition | SPRING 2011            |
| Certificates for Excellence in Research, Morehouse College         | FALL 2007, 2008        |

GM Scholarship, The University of Michigan  
 Boeing Scholar, AUC Dual Degree Engineering Program  
 Full Scholarship (room, board, tuition, fees), Morehouse College  
 Dual Degree Engineering Scholarship, the University of Michigan  
 Hilton Worldwide Corporate Scholar, National Society of Black Engineers  
 Harm Buning Scholarship Award, Aerospace Department, The University of Michigan  
 BP Scholar, AUC Dual-Degree Engineering Program AND The University of Michigan

**RELATED PROFESSIONAL EXPERIENCE**

- 1. MIT Summer Research Program (MSRP)**  
 Participated in seminars about the general graduate school process, life concerning research, and multiple research endeavors being conducted at MIT.  
 Completed community service setting up and participating in an urban planning workshop for citizens looking to improve their portion of the Boston community.
- 2. NIST Summer Undergraduate Research Fellowship (SURF) Program**  
 Participated in workshops about the life concerning research at a governmental research facility, and multiple research endeavors being conducted at NIST.

**RELATED PROFESSIONAL EXPERIENCE (cont'd)**

- 3. John H. Hopps Research Scholar**  
 Attended spring break trips learning about research and graduate school opportunities at Kennedy Space Center, The Boeing Company, Microsoft Corporation, University of Washington, Chicago University, and many others. Helped build lasting connections with faculty from Morehouse, faculty from other universities, and research scientists from private and governmental institutions which will partner with the Hopps Scholars program for years to come.
- 4. National Society for Black Engineers (NSBE)**  
*In Atlanta University Center (AUC) as Public Relations Chair:*  
 Worked to increase attention, knowledge, and interest in the (AUC) Chapter of NSBE by designing and distributing flyers throughout collegiate institutions.  
 Operated Public Relations committee to publicize multiple successful NSBE events, such as a NSBE Week, the Region 3 Fall Regional Conference, and the NSBE National Convention.  
 Designed a new AUC NSBE Logo to be used for years to come.  
  
*At The University of Michigan as a member of Community Service Committee:*  
 Successfully founded, designed, advertised, wrote grant for, and managed [HelpNSBEHelpHaiti] Initiative, where we collected over 2200+ dollars in donations for a grassroots Haitian organized donation fund called the Croix Marchaterre Project.  
 Participated and managed multitudinous community service initiatives, such as Adams Elementary Engineering Club, Crisler Arena Cleanup, and University of Michigan Engineering Tech Day.
- 5. Summer Intern, General Motors**  
 Completed 15-week work assignment concerning manufacturing details necessary for the next generation Corvette.  
 Required handling of proprietary information concerning novel GM techniques and technology, and travel from Warren, MI to Bowling Green, KY approximately once a month for project specifics.  
 Compiled and presented findings to executive staff members of Bowling Green Corvette Plant.

**MEMBERSHIPS**

|   |             |
|---|-------------|
| Tau Beta Pi Engineering Honor Society, Mi-Γ Chapter, The University of Michigan | WINTER 2011 |
| NASA Student Ambassadors Program  | WINTER 2011 |
| The Phi Beta Kappa Society, Δ-GA Chapter, Morehouse College                     | SPRING 2010 |
| Sigma Pi Sigma Physics Honor Society  | FALL 2009   |
| Golden Key International Honour Society   | SPRING 2009 |