



October 10, 2016

Albert Nerken
School of Engineering

The Cooper Union
for the Advancement
of Science and Art

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Dear Acting Dean Stock:

It has been my great honor to work alongside the exceptional students, faculty, and staff at The Cooper Union since September 2005. During this time, I have developed instructional and research laboratories, enhanced the curriculum through core and elective course offerings, participated actively in departmental, school, and institution-wide service activities, published peer-reviewed articles, extensively sought and received funding from various public and private sources, and advised numerous student groups. I am excited to share these achievements with you and the faculty through my portfolio as I am considered for *promotion to the rank of Professor*.

You will find that my teaching, research, and service activities are closely linked; I strive to create low-cost, dual-use, experiential learning environments for my students for use in the classroom and adaptation for research and scholarship. The Formula SAE Project is one such activity that many are familiar with – other projects include the Chronic Intermittent Hypoxia system, the NSF-funded Laser PIV system, and the STEM programs that I have recently established and discussed during the last full-time faculty meeting.

Selected samples of these activities are found in my portfolio, which is organized in the following labeled sections:

CV/Letters: a current CV (hyperlinked to web sources), letters of support from collaborators and correspondences that detail my work. A digital copy of this updated CV is found here so that these links can be visited (CV and Bio link):

engfac.cooper.edu/george

Grants/Proposals: Samples of funded, unfunded, and pending proposals, including reports to funders on programmatic outcomes.

Academics: My teaching statement, course syllabi and student work for courses that I developed or enhanced. Instructor evaluations and sample student work are also included.

Projects/Publications: Peer-reviewed publications and the abstracts from all the graduate students I advised.

Service and Awards: Service activities and copies of the awards I or my student teams have received.

Media: Newspaper, magazine, and television sources where I and/or my students and projects are highlighted. Note that my CV contains hyperlinks to broader media mentions than are provided here in hardcopy.

I look forward to speaking with you about the many opportunities that lie ahead in the School of Engineering as we work together to enhance the school's mission. Please let me know if you have any questions about my portfolio.

Yours truly,

George J. Delagrammatikas, PhD
Program Director, STEM Outreach
Associate Professor, Mechanical Engineering

GEORGE J. DELAGRAMMATIKAS, PHD



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Prof. Delagrammatikas earned an MSME (1996) and PhD (2001) from the University of Michigan where he developed optimal design strategies for advanced and hybrid [automotive powertrains](#). He advises student research in advanced combustion ([HCCI engines](#)), electric vehicles, and hybrid electric powertrains.

George joined Cooper Union in September 2005 and has taught courses in design theory, the thermal-fluid sciences, experimentation, internal combustion engine design, and automotive engineering. He is the faculty advisor of the [Cooper Motorsports Team](#) which designs and builds racecars for the FSAE competition. He performs research in automotive systems as the faculty advisor of the FormulaSAE Team; he also advises Pi Tau Sigma and is the Link Governor of the Order of the Engineer chapter at Cooper Union. George is the Program Director of [STEM Outreach](#) and engages hundreds of K12 students in engineering design throughout the year. He is a member of SAE, ASME, ASEE, Pi Tau Sigma (faculty advisor), and the Order of the Engineer (Link Governor).

Areas of Interest: IC engine design, automotive engineering, machine design, renewable and sustainable energy systems, multidisciplinary design optimization, undergraduate engineering education.

GEORGE J. DELAGRAMMATIKAS

Program Director, STEM Outreach
Associate Professor, Mechanical Engineering
The Cooper Union for the Advancement of Science and Art
georged@cooper.edu

A digital copy of this CV can be found at:

EDUCATION

- | | | |
|------|--|---------------|
| 2001 | The University of Michigan | Ann Arbor, MI |
| ■ | Ph.D. Mechanical Engineering | |
| | <i>Dissertation: A Design Optimization Methodology for Advanced and Hybrid, Diesel-based, Automotive Powertrains</i> | |
| | Co-advisors: Dr Dennis Assanis and Dr Panos Papalambros | |
| 1996 | The University of Michigan | Ann Arbor, MI |
| ■ | M.S. Mechanical Engineering | |
| 1995 | Massachusetts Institute of Technology | Cambridge, MA |
| ■ | B.S. Mechanical Engineering | |

ACADEMIC EXPERIENCE

- | | | |
|--------------|-------------------------|--------------------|
| 2005-Present | The Cooper Union | New York, New York |
|--------------|-------------------------|--------------------|
- Program Director, STEM Outreach: September 2015 - Present*
- Responsible for all matters related to the K12 STEM Outreach Programs found in the School of Engineering. Cumulative net revenue since Summer 2014: \$750,000
 - Establishing the first Saturday STEM Program catering to under-represented high school students in engineering
 - Directing the Summer STEM Program with a projected enrollment of 220 students for summer 2017. In 2016, 40% of participants were female; 42% received free scholarships; 212 total students
 - Coordinating and teaching in the STEM Days
 - Mentoring two high school teams in building a Rube Goldberg machine for entry in a local competition through the High School Innovators Program (now called STEM Inventors). One team earned the 2nd place prize in the regional NYC competition in March 2016
 - Designing and maintaining a makerspace for use by undergraduates and outreach students; identifying and purchasing 3D printers, laser-cutters, and microcontroller hardware
 - Responsible for all grant-writing and financial modeling of STEM outreach programs
 - Organizing students from professional societies to serve as teaching staff for these programs
 - Securing guest lecturers for panel assemblies where STEM students are exposed to women, people of color, and other under-represented groups in tech fields
 - Established partnerships to promote Cooper Union STEM Outreach with the following: Intrepid Museum's GOALS for Girls Program, Achievement First University Prep, Opportunity Network, Wishbone Foundation, AECI Charter Schools, ScriptEd.
 - The programs listed above are described in more detail at this link:
<http://cooper.edu/engineering/k-12-outreach>

Associate Dean, Education and Administration: January 2015 – August 2015

- Responsible for the day-to-day operations of the Albert Nerken School of Engineering consisting of 7 departments, 40 full-time faculty, 15 staff members School-wide, nearly 40 adjunct faculty per semester, and 450 undergraduates
- Director, Summer STEM Program, a six-week summer enrichment program for high school students. Enrollment trends: 65 (2013), 145 (2014), 205 (2015).
- Established the STEM Days outreach initiative which links Cooper Union students and faculty to middle and high schools in the New York City region for day-long, immersive experiments
- Managed a \$6M operating budget and liaised with Development to manage \$20M of endowments
- Recruited, hired, and appointed full-time and adjunct faculty and staff
- Directed student programming, scheduling, and advisement
- Key contact between the Dean's Office and Admissions, Student Records, Human Resources, Payroll, and the Bursar

Acting Associate Dean: August 2012 – August 2014

- Helped mobilize the School through a reinvention process to develop new, revenue-generating pre-college and graduate programs (Fall 2012)
- Led the School of Engineering through a successful ABET visit with the then Acting Dean (Fall 2012)
- Director, Summer STEM Program
- Director, Study Abroad and Foreign Exchange Program
- Succeeded in developing a non-thesis Master of Engineering degree, approved by the New York State Department of Education in 2014

Assistant Professor: 2005-2011; Associate Professor, 2011-Present (Tenured)

- Automotive Laboratory – designed a laboratory with architects and school planners for the academic building that opened in 2009. Current major equipment includes: a double-ended eddy current engine dynamometer; test stands for gasoline, diesel, and gasoline-HCCI engines; a single-cylinder, turbocharged gasoline engine stand; a flame speed experiment; a student-designed chassis dynamometer in progress; a torsional frame rigidity test stand; a wind tunnel outfitted with a laser PIV system; and a driving simulator.
- Formula SAE Project – Faculty Advisor: annual donations through cash and kind: \$80k. Since 2007, ConEd has donated a total of nearly \$100,000 to this project.
- Taught courses in design theory, thermal systems design, senior projects, fluid mechanics, engineering experimentation, senior capstone design projects, automotive engineering, internal combustion engine design
- Project Director in the [Summer STEM Program](#) for the following courses:
2006-2016: The Rube Goldberg Project – An Introduction to Mechanical Engineering
2014-2016: Racecar Design through Engineering Experimentation
- Chronic Intermittent Hypoxia Project: primary investigator, provisional patent application submitted December 2007. This project was an example of using relevant and timely research in the classroom. A publication resulted from my collaborations with researchers in the neuroscience field. The device was a laboratory enclosure that simulated the effects of obstructive sleep apnea on laboratory animals. The patent process was abandoned in fall 2014 due to prohibitive legal costs to the institution.
- The grant listed here was proposed to enhance both the teaching and research capabilities of the educational wind tunnel that had been in use for many years. Prof Wootton led the effort to learn more about human airway mechanics and I used the system to learn about the fluid mechanics in the chronic intermittent hypoxia enclosure described above.

Wootton, DM (PI), Delegrammatikas G. "[MRI-R2: Acquisition of Endoscopic Particle Image Velocimetry System and Multiprocessor Computer for Fluid Mechanics Research](#)," National Science Foundation, \$152,857 total, February 2010 – Dec 2011

Sept. 2003-2005 **California Polytechnic State University**

San Luis Obispo, CA

Assistant Professor

- Donald E. Bently Endowed Professor (2003-2005)
- Director, Engine Laboratory
- Course Coordinator: Introductory and Advanced Internal Combustion Engine Design; Hybrid Electric Vehicle Design
- Committee Member: Laboratory Facilities, Student Project Laboratory, Long-Range Planning
- Faculty Advisor: Hybrid Vehicle Development Team, Solar Car Club, SuperMileage Team (consulting faculty)
- Research projects that illustrate laboratory and curricular development include:
 1. A homogeneous charge compression ignition (HCCI) engine for combustion stability and flammability studies. This combustion process is a very relevant topic is a very promising transitional technology for gasoline engines, promising high fuel efficiency and very low pollution emissions (through an ONRL grant)
 2. Fabrication of a flowbench experiment for instructional purposes to enhance the fundamental understanding of flow dynamics through valves and manifolds – a senior project
 3. Refinement of a variable compression ratio engine experiment to study the effects of compression ratio, fuel air ratio, and engine speed on volumetric efficiency and overall thermal efficiency
 4. Development of a hybrid electric vehicles course in which students used vehicle-level simulators wrapped within numerical optimization schemes to design efficient vehicles for particular applications

PUBLICATIONS

The following seven conference publications were results of work performed in my laboratory as a result of research related to the Formula SAE Team. The papers were written for an audience of undergraduates just starting off their careers on their school's Formula teams.

- Consiglio, J., and **Delagrammatikas, G.J.**, [*A Cost-Effective Engine-in-the-Loop Powertrain Testing System*](#), SAE Paper #2010-01-0192, presented at the 2010 SAE World Congress, Detroit, MI.
- Vaughan, A., and **Delagrammatikas, G.J.**, [*An Onboard Telemetry System for Low-Level Electrical Signals*](#), SAE Paper # 2010-01-0191, presented at the 2010 SAE World Congress, Detroit, MI.
- Vaughan, A., and **Delagrammatikas, G.J.**, [*Variable Runner Length Intake Manifold Design: An Interim Progress Report*](#), SAE Paper # 2010-01-1112, presented at the 2010 SAE World Congress, Detroit, MI.
- Robertson, D., and **Delagrammatikas, G.J.**, [*The Suspension System of the 2009 Cooper Union FSAE Vehicle: A Comprehensive Design Review*](#), SAE Paper # 2010-01-0311, presented at the 2010 SAE World Congress, Detroit, MI.
- Baldisserotto, M., and **Delagrammatikas, G.J.**, [*Implementing a Dry-Sump Lubrication System in a 600cc Suzuki GSXR Engine for an FSAE Vehicle*](#), SAE Paper # 2010-01-0310, presented at the 2010 SAE World Congress, Detroit, MI.
- Fedullo, T. and **Delagrammatikas, G.**, [*The Traction Control System of the Cooper Union FSAE Vehicle*](#), SAE Paper # 2011-01-1108, presented at the 2011 SAE World Congress, Detroit, MI.
- Vaughan, A. and **Delagrammatikas, G.**, [*A High Performance, Continuously Variable Engine Intake Manifold*](#), SAE Paper # 2011-01-0420, presented at the 2011 SAE World Congress, Detroit, MI.

The following paper resulted from a device that I designed and built that simulated the effects of obstructive sleep apnea on laboratory animals. The device was implemented with the laser PIV system described earlier and had been the subject of numerous class exercises in the engineering experimentation course I taught.

- Coleman, C., Wang, G., Park, L., Anrather, J., **Delagrammatikas, G.**, Chan, J., Zhou, J., Iadecola, C., and Pickel, V. "[Chronic intermittent hypoxia induces NMDA receptor-dependent plasticity and suppresses nitric oxide signaling in the mouse hypothalamic paraventricular nucleus.](#)" *J. Neuroscience*, September 8, 2010, 30(36):12103–12112

GRADUATE THESIS ADVISEMENT

An Optimization Approach to the Design of a Formula-Style Racecar Through Artificial Neural Network Surrogate Models, Vito DiIenna, 2006

A Proposed Vision to Reinvent the Mechanical Engineering Department's Instrumentation and Thermal Sciences Laboratories, Michal Madej, 2006

A Design Optimization Methodology for the Rear Suspension of the 2007 Cooper Union Baja SAE Vehicle, Petar Miskovic, 2007

A Design Optimization Methodology for the Front Suspension of the 2007 Cooper Union Baja SAE Vehicle, Daniel J. Broyles, 2007

A Comprehensive Design Analysis of the 2008 Cooper Union Formula SAE Vehicle: "The Boverly Bomber", Shiann Shin Yamin, 2008

A Novel Navigation System to Aid in Total Knee Replacement Surgery, Sachin Bandhari, 2008

A Hardware-in-the-Loop System to Simulate Realistic Driving Cycles for Conventional and Hybridized Vehicles, John Consiglio, 2009

A Variable-Geometry Intake Manifold for a 600cc Gasoline Engine, Adam Vaughan, 2009

Characterizing the Feasibility of a Novel Lubricate for Use in Sheet Metal Stamping Processes, Karna Krishna, 2009

Design and Development of an Experimental Test Stand for Electric and Hybrid Electric Vehicles, Craig Ginsberg, 2011

Development of a Gasoline Homogeneous Charge Compression Ignition (HCCI) Engine Test Stand, Dennis Robertson, 2011

Vehicle Simulation Analysis and a Hardware-in-the-Loop Framework for Electric Vehicle Design, David Hahm, 2011, co-advised with Prof Melody Baglione (ME)

Preliminary Explorations into the Development of a Single-Cylinder, Turbocharged Engine for Use in a Formula SAE Racecar, Jonathan Zorko, 2016.

AWARDS AND MEMBERSHIPS

- Doc Harold Edgerton Scholarship: 1993, 1994 (MIT)
- First Annual Scholar Power Banquet Award: Ph.D. level, 2002 (The University of Michigan)
- Cooper Union Students' List, Spring 2008, 2009
- [Ralph E Teetor Educational Award from SAE International](#), SAE 2010 World Congress, Detroit, MI

- Excellence in Oral Presentation Award from SAE International, SAE 2010 World Congress, Detroit, Michigan
- Member: SAE, ASME, ASEE, IITΣ (Faculty advisor), Order of the Engineer (Link governor)

SCHOOL SERVICE, MEDIA, AND OUTREACH

Cooper Union Committees and Campus Service

Middle States (Governance subgroup)

Information Technology

Institutional Review Board

Presidential Search Committee

[Revenue Task Force](#)

Emergency Management Team

Admissions Committee (School of Engineering)

Transition (ME Department Ad Hoc)

Acting Associate Dean

Faculty Advisor, [Cooper Motorsports Team](#)

High School Research Mentorship:

I mentored the following students as they performed research with me at Cooper Union. They all entered local science fairs, as well as national competitions like the Intel Science Search and the Siemens Competition in Math, Science, and Technology.

Design, Fabrication, and Testing of a Bamboo Bicycle, Max Kiss, The Bronx H.S. of Science: Sept 2008 – Dec 2010 – [The Daily News](#) article link about him meeting President Obama can be found [here](#).

Development of a Novel Formula SAE Intake Nozzle, Kabou Yengo-Passy, The Bronx H.S. of Science: Oct 2012

Designing Parallels: A Better Downhill Mountain Race Bike, Austen Paris, Sleepy Hollow High School: Jan 2015 – Dec 2015 – Dec 2014 – Austen won the Acorda Scientific Award, link [here](#).

A Data Acquisition System for the Cooper Union FormulaSAE Racecar, Brandon Vabre, Bergen County Academy: Sept 2014 – May 2015

Public Events

World Science Festival [2009](#) and [2013](#): Participant

[2015 Google Geek Street](#) Fair: organized Formula Team participation.

Summer STEM Program

Mentorship of [Manhattan Comprehensive Night and Day High School](#) students during the Summer STEM Program (2006-present): Sample videos of work at this playlist: [link](#)

STEM Days Outreach Program (links [one](#), [two](#), [three](#), and [four](#))

Metropolitan Expeditionary Learning School, Jamaica, Queens

LaSalle Academy, New York, NY

Grace Church School, New York, NY

Icahn Charter School, New York, NY

Islip Public School, Islip, NY
PS 85Q, Gifted and Talented

Advisory Board Membership

I was invited to join the following advisory boards since the 2015-2016 academic year and I gladly accepted for the reasons listed under each institution.

CUNY [Center for Sustainable Energy](#) at Bronx Community College

This school is in one of the country's most socioeconomically disadvantaged neighborhoods; they have a 12% graduation rate.

[Quad Prep School](#) for Twice Exceptional Children ([Research Subcommittee](#))

This school was founded almost two years ago for very high-functioning students on the Autism spectrum. My intent is to immerse these students in our outreach programs and perform research with psychologists at partner institutions on the efficacy of different pedagogical interventions.

The [Long Island Whole Child Academy](#) for Twice Exceptional Learning

I joined this advisory board in Fall 2016 and act as a curriculum advisor for their STEAM activities.

Conference/Lecture Organizer

The Tuskegee Airmen Visit the Great Hall: links [one](#) and [two](#)

Women in STEM Assembly: [link](#)

Breakthroughs in Twice Exceptional Education: [link](#) and [link](#)

Form Follows Function: Structure and Architectural Concept: [link](#)

Building the (Near) Impossible: How Structure Becomes Architecture: [link](#)

GEORGE J. DELAGRAMMATIKAS, PHD

Teaching Statement

In August 2015, I was fortunate enough to attend the First Year Engineering Education Conference at Virginia Tech (fyee.org) where I met many educators like myself – all striving to provide their students with the best educational experience possible. Since that meeting, I have been inspired to recount the transformative events and influential people that have contributed to who I am, and who I want to become, as an engineering educator. The following sections summarize my teaching philosophy in the classroom and laboratory. In this section, you will find syllabi from courses that I developed or enhanced and student work that illustrates educational outcomes.

Mastery through Application I joined Cooper Union's Mechanical Engineering Department in September 2005 after two years as an assistant professor at CalPoly in San Luis Obispo. I admire (and am in awe of) CalPoly's 'learn-by-doing' philosophy which immerses students in authentic, hands-on engineering problems; I contributed to this pedagogy extensively while there and continue to keep in contact with those colleagues as I benchmark their program and others. At Cooper Union, a balance is struck between uncommonly-rigorous theoretical training and real-world application, thereby allowing students to also creatively innovate. In the classroom, I contextualize the knowledge that is being taught and I design assignments drawn from engineering literature (generally ASME, SAE publications) with which students illustrate their understanding of the material on relevant and timely problems. In some of my classrooms, the typical lecture is substituted with what looks more like a research group meeting in graduate schools; this environment allows me to better relate to my students as I fine-tune their individual educational goals.

Teamwork and Leadership As an undergraduate at MIT, I learned the importance of teamwork during my senior project, as I designed, analyzed, fabricated, and raced solar cars across America with over 20 fellow classmates. This activity was by far the most rewarding experience of my undergraduate education – one which I have tried to emulate for my students in several key dimensions. In addition to character-building, leadership, teamwork, technical communication, and professional skill-building, I have set up a learning community with the FSAE team I currently advise. As my students design racecars for the FSAE competitions, they teach younger students who all take ownership of a vehicle subsystem in the freshman design course I teach. This experience allows the upperclassmen to truly master a topic because they have to teach it. All students ultimately lead outreach seminars as I instill in them a sense of obligation to serve our community. My students also see how I collaborate with my colleagues in trying to improve the curriculum and develop laboratory experiments, all with an eye on preparing them for the future. A myriad of posters from ME 163/ME 164 Senior Capstone Design show 1) the breadth and depth of the student work that I advised, and 2) the professional society-style poster sessions that are an innovation that I brought to this course.

Classroom Innovation I have been teaching Advanced Thermodynamics (junior year, second semester) for many years. I transformed it from a course that was essentially a review of introductory thermodynamics concepts into a thermal design course. In so doing, I developed a series of online videos that students watched at home (video [one](#), [two](#), and [three](#)); they came to class to actively participate in programming design optimization algorithms to study steam powerplants, internal combustion engines, and refrigeration cycles. This flipped classroom model has worked effectively in allowing students to become proficient in these concepts, and not just looking up

properties in steam tables. In a school as small as Cooper Union, the faculty benefit from the ability to innovate within their courses rather easily; I do so frequently with guidance from educational research and my peers in all my courses. You will find an examples of this work and evidence from an ME exit survey pointing to the effectiveness of this course on their education.

An Open Space for Creating For EID 101, in collaboration with the central and student shop technicians and the safety coordinator, I developed a shop orientation manual and exam that all incoming freshmen have to take and pass in order to continue their studies. Because engineering education is adapting in order to increase hands-on, design-centered activities, we must also adapt to provide the correct learning environment for our students. Currently, I am working on developing a manual for our Makerspace in Room 725. This space, which I currently manage, is open to students and faculty from all three schools. During the 2015-2016 academic year, EID 101 students used this space extensively for their class projects during the first semester. I also noticed through documented sign-up sheets (all students are required to sign in), that many students wanted to use the equipment (computers, 3D printers, etc) for personal projects. This ability to create independently will give our students the innovative freedom they need to explore through curiosity-driven projects that necessarily tend toward multidisciplinary design.

GEORGE J. DELAGRAMMATIKAS, PHD

Research and Scholarship Statement

Performing research and scholarly work at a predominantly undergraduate teaching institution is a challenge for many faculty. With such a high teaching load, many faculty elect to incorporate their research into their classroom. Some do so successfully without compromising the teaching of the fundamentals. My philosophy is to enhance **both the physical and virtual prototyping** skills that will make my students effective engineers upon graduation. This takes considerable communication with external sources along with continuous literature review to ensure that what is being taught is applicable to what they will encounter.

The **Formula SAE Team** has been a very successful outlet for scholarship with numerous peer-reviewed publications through the years. My vision for the Automotive Laboratory, from my first days at Cooper Union (included in this section), was to establish a full-fledged center for automotive research that covered a breadth of topics and technologies. I developed this vision while at CalPoly in San Luis Obispo where I saw that this learning environment could be used for research opportunities. In addition, there is no shortage of students who are interested in the team, thereby making research assistants every-present. I have incorporated this research in courses like Senior Capstone Design, Engineering Experimentation, Automotive Engineering Design, Internal Combustion Engine Design, Advanced Thermodynamics, and Engineering Design and Problem-Solving.

A few of the topics that I have explored with FSAE are: 1) homogeneous charge compression ignition, 2) turbocharged gasoline engines, 3) diesel engine combustion, 4) torsional rigidity testing of an automotive frame, 5) carbon fiber design, manufacturing, and testing for suspensions, 6) computational and experimental studies on vehicle aerodynamics, 7) a particle-image velocimetry system for intake design, 8) artificial neural network surrogate modeling for design optimization studies, and most recently 9) quasi-static and dynamic testing of crushable elements.

I have also performed curricular and extracurricular activities for scholarship with the **STEM outreach programs** I have developed. Many schools offer outreach pre-college programs, yet many use them strictly for revenue generation. I am developing a research component to all these programs so that we can track the effectiveness of what we do on the lives of these students. Longitudinal studies are critical, though expensive and tedious. I am working with external collaborators to include a socioeconomic and ethnic component to this research as I promote these programs as more inclusive of all cultures. You will find assessment tools in this portfolio that speak to this scholarship effort.

Finally, one project that you will find here that I worked on which involved a number of Cooper Union students in class was the **Chronic Intermittent Hypoxia** system I designed. From 2006-2014, I worked on this project with collaborators, included it in courses, and co-authored a publication in *J. Neuroscience*. This section contains the provisional patent application for this invention.

GEORGE J. DELAGRAMMATIKAS, PHD

Summary of Service Activities

Pi Tau Sigma Faculty Advisor
Order of the Engineer, Link Governor
Revenue Task Force
Presidential Search Committee
Acting Associate Dean
Associate Dean, Education and Administration
Academic Standards Committee
Town+Gown School Contact
ASEE School Representative
Admitted Students Day, Open Houses, and numerous guidance counselor meetings
Off-campus lectures at local high schools