SECTION 09: EVALUATION OF PROFESSIONAL AND UNIVERSITY SERVICE

EVIDENCE OF PROFESSIONAL SERVICE

I see my service to the local and global community as a way to share the benefits of my research and utilize my ability to teach and communicate with a wide variety of people. Service expands my support to students by providing real world problems that they can tackle. My contributions to the profession are in the form of

- Professional Organizations
- Student Organizations
- Consulting to public and non-profit clients

I am an active member of professional organizations, I network at meetings, volunteer for outreach efforts, take on leadership roles through appointed and elected offices.

Current memberships:

- American Solar Energy Society (ASES)
- American Society for Engineering Education (ASEE)
- American Society of Heating Refrigeration and Air Conditioning (ASHRAE)
- Association of Energy Engineers (AEE)
- National Association of Power Engineers (NAPE)

I have been an ASES Solar Tour Site Exhibitor in Indianapolis for the 2010 and the 2011 tours. I setup residential scale solar thermal and solar electric systems at IUPUI and approximately a half dozen local citizens visited and asked questions about the technology.

I started serving ASEE by volunteering to be a Peer Reviewer for the American Society of Engineering Education Annual Conference. I have reviewed approximately a dozen abstract papers and approximately five final papers for the following divisions:

- ASEE Engineering Technology Division (Abstracts): November 2013
- ASEE Engineering Technology Division (Final Papers): February 2013
- ASEE Engineering Technology Division (Abstracts): November 2012
- ASEE Engineering Technology Division (Final Papers): February 2012
- ASEE Architectural Engineering Division (Final Papers): February, 2011
- ASEE Engineering Technology Division (Final Papers): February, 2011
- ASEE Architectural Engineering Division (Abstracts): November, 2010
- ASEE Engineering Technology Division (Abstracts): November, 2010

Next, I was appointed Moderator at the annual conferences, in which I would contact presenters, setup the presentations on my laptop, introduce each speaker, and make sure the session stayed on time. Attendance for the sessions varied widely but the average was approximately twenty, I moderated one session for each of the following:

- Engineering Technology Division. National Conference, Indianapolis, June 2014
- Architectural Division. National Conference, Atlanta, June 2013
- Engineering Technology Division. National Conference, Atlanta, June 2013
- Engineering Technology Division. National Conference, San Antonio, June 2012
- Architectural Engineering Division. National Conference, Vancouver, June 2011
- Engineering Technology Division. National Conference, Vancouver, June 2011

As partial evidence of my national reputation; In 2014, I was elected (by the national membership of the Engineering Technology Division of ASEE) to be the Conference for Industry and Education Collaboration (CIEC) Program Vice Chair for the 2015 conference and CIEC Program Chair for the 2016 conference. In this role, I will help organize the program session presentations, send out calls for abstracts, plan venue tours, etc.

Again in 2015, I was elected (by the national membership of the Engineering Technology Division of ASEE) to be the Treasurer for the division. In this role, I will help organize the mini-grant program, track budget expenditures, etc.

ASEE is a great organization that provides networking opportunities that will lead to collaboration on future funding proposals. I have collected approximately two dozen business cards from people interested in my area of research and I plan to continue seeking higher roles within ASEE to expand my national/international recognition.

I regularly attend local meetings for the other professional organizations (AEE, ASHRAE, and NAPE) to keep current on the latest technologies, help students network with local companies, and to try and bring projects back to the classroom. I have taken approximately five students to these meetings and one (Arash) added some personal initiative with an ASHRAE contact and turned it into an internship with Cummins last summer.

As partial evidence of my regional reputation; my reputation in the energy efficiency community led to being appointed to the Board of Governors of the Indiana Chapter of the Association of Energy Engineers in 2014. During my tenure, the chapter won an award from AEE national for being the fastest growing chapter in the US.

I have supported students by serving as advisor for two clubs:

- Advisor, Engineers Without Borders Academic Chapter Indiana 2010-2014
- Co-Advisor, IUPUI Energy Club, 2010-2012

I will discuss the impact of Engineers Without Borders later in this document, but will mention that over a dozen students from across disciplines have been very active during my time with the club and as many as thirty have been involved to a lesser extent. As advisor of the energy club I helped students organize seminars with local vendors and experts in topics related to energy, the group had approximately a dozen members with attendance to the open seminars as high as approximately three dozen.

Evidence of Engagement with Non-Academic Communities and Agencies

As partial evidence of my national reputation; the Environmental Protection Agency (EPA) has recognized me as an expert in sustainable energy with respect to energy sources and the built environment. They have asked me to act as a grant reviewer several times, and I was able to serve twice:

- Grant Peer Reviewer, P3 Applications, March 2013
- Grant Peer Reviewer, SBIR Applications: August, 2010.

The EPA's P3 – People, Prosperity, and the Planet—Programs goal is to provide a college competition for designing solutions for a sustainable future. A quality P3 proposal will offer students quality hands-on experience that brings their classroom learning to life while tackling a sustainability topic. I reviewed approximately ten P3 proposals and acted as Rapporteur for three proposals. Similarly, the Small Business Innovation Research (SBIR) program provides small businesses funds to develop new products that address sustainability issues, with respect to

improving energy efficiency, reducing pollution, etc. I reviewed approximately ten SBIR proposals and acted as Rapporteur for three proposals. The P3 grant had a significant impact on students, funding several capstone type projects at approximately ten universities across the country. The SBIR grant is significant because it makes it possible for small companies to bring new products to market that impact energy and the environment. I will continue to serve on both grants every few years.

EVIDENCE OF SERVICE GRANTS

I have received the following four external and one internal grants:

- Goodman, D. (PI). "Equipment Grant". Carrier Corp. ($5,000) (100% effort). 2014.
- Goodman, D. (PI). "Equipment Grant". Carrier Corp. ($5,000) (100% effort). 2013.
- Goodman, D. (PI). "Equipment Tax Abatement Study". Roll Formed Corporation. ($5,000) (100% effort). 2013.
- Goodman, D. (PI). "Equipment Grant". Carrier Corp. ($5,000) (100% effort). 2012.
- Goodman, D. (PI). "National Product Review: Electrical Service Protection".
    - External: Ductcrete Inc. ($2,000) (100% effort). 2011.
    - Internal: Solution Center Grant ($2,000) (100% effort), July 2011.

I have applied for equipment grants from Carrier Corporation in 2012, 2013, and 2014, and will continue to do so, in order to improve student access to equipment within the department. I used to funds to purchase new portable meters and data acquisition equipment to allow students in ECET-231, TECH-301, and TECH-581 to study energy and energy efficiency topics. Approximately forty-five students per year use the modern equipment in their classes.

The Roll Formed Corporation grant funded myself and three students to study how the company was using electrical energy. We developed a report that was used by the company to reduce their tax burden y approximately $5,000 per year and improve their economic competitiveness.

In 2011, I was the Principle Investigator on a grant with the IUPUI Solution Center to help a local company (Ductcrete, Inc.) review a new product designed to protect electrical cables. I assessed data on fire testing and concrete, but the project did not move past these initial stages due to organizational changes within the company, which also led to later retraction of the internal funds which would have funded a student internship at the company.

EVIDENCE OF UNIVERSITY SERVICE

Department Service Activities

Within the Engineering Technology department, I have actively served in the Search and Screen Committee and have helped to decide on two new faculty members for the department.

School Service Activities

I have participated as the Faculty Senate Representative for the Department of Engineering Technology since the fall of 2010. I acted a conduit to relay information and concerns between the department and the administration. I attended all by approximately three sessions to date and voted on many new course proposals, the FLAG system, etc.

I was recently asked to serve on the PLM Core Working Group committee, which is tasked with how to best leverage a $538 million dollar software grant from Siemens and develop a new sustainable center dedicated to product lifecycle management (PLM). We met at least once a week during the Spring 2014 semester and several times over the summer. To date I was instrumental in naming the new center, Innovative Product Lifecycle Initiative (IPLI), suggesting

local industries that may be interested, discussing PLM with approximately three dozen attendees at a Roundtable Event (half faculty, half industry), etc.

University Service Activities

At the university level, I have served as a voting member of the Campus Sustainability Steering Committee. I was the co-chair for Energy and the Built Environment, a subcommittee of the Campus Sustainability Steering Committee from 2010-2013 when we reorganized after the external STARS rankings. Since then, I also serve on the Educational and Resource Committees. I have voted on sustainability efforts, which impacted the following: 1) student research projects funds which provide water filling stations in many buildings to reduce plastic bottle usage, new bike racks and bike service/storage facilities, 2) as co-chair my committee submitted proposals to change policies that deal with the use of low VOC paint and low VOC flooring on campus, additionally I voted on the campus building temperature setback policy, and recently a statement to a local utility about converting from coal within the city limits

I also played an active role in organizing the Transatlantic Climate Bridge; a partnership initiative between the German Consul and U.S. universities about becoming aware of energy issues. As part of the events, I conducted a Bike-for-Light campaign to educate people about energy, energy conversion, and how much energy it takes to live a modern lifestyle. Approximately one hundred people watched or attended over three days.

SUMMARY AND FUTURE DIRECTIONS

Overall, service is critical to developing the type of students that will go on to make huge impacts in our global community and I will continue to contribute and show a good example. My work with students, student organizations, various campus committees, industry partners, and international organizations is thoughtful, thorough, and important because it impacts daily lives, puts a face to global issues which motivates students to get active and educated, and tackles grand challenges which will inspire innovation. I will continue my contributions to all these areas and continue to be a strong example to my peers and bring projects back to my classrooms.