Curriculum Vitae.

Ms. Courtney L. Thornberry

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Profile:

I am a highly motivated individual with a passion for efficiency and organization. I have a vast technical background, combined with leadership skills that have proven effective in many different environments and situations. I work well both individually and as a team player. I bring the ability to listen and think analytically and critically. I have an aptitude to coordinate all members of a team resulting in positive solutions and great accomplishments.

Employment:

University of Warwick, WMG **01/2012 – Present**

A university located in Coventry, UK with about 20,000 students. WMG is a collaborative innovation and research center that is a part of the university.

Position: International Engineering Doctorate Student
Duties:

- Research Product Lifecycle Management (PLM) for applications for Small to Medium-sized Enterprises (SMEs)
- Work with Formula Student team to understand team organization, structure and knowledge transfer
- Work with other EngD students at Warwick on group projects relating to entrepreneurship and fuel cells in the UK
- Research topics on collaboration, particular open source hardware design and how it may be successfully applied to various industries, such as motorsports

IUPUI-Engineering & Technology Department **08/2009 – 12/2011**

An urban university (Indiana University Purdue University Indianapolis) located in the capital city of Indianapolis in the state of Indiana

Position: Research assistant for two professors
Duties for Dr. David Goodman:

- Help to design testing equipment for local industries and facilitating a partnership between the university and industry
- Assist with research publications
- Organize renewable energy course material for online courses

Duties for Dr. Rongrong Chen:

- Learn and understand Scanning Tunneling Microscopy (STM) as a method of studying catalyst performance at an atomic level
- Utilize Physical Vapor Deposition (PVD) through collaboration with the Physics Department to create stable catalyst samples for STM study
- Develop two different methodologies for cathode fabrication
- Establish a performance testing methodology for the cathode that analysed surface hydrophobicity, gas permeability and electrochemical testing, such as CV and ORR
- Work done helped to double cathode performance through design improvement

Richard G. Lugar Center for Renewable Energy **01/2010 – Present**

A research institution located on IUPUI's campus in Indianapolis working to establish connection between university research and industrial innovation in renewable energy technology

Position: Intern

Duties:

- Develop a process for maintaining the Center's website and blog using Six Sigma methodology (DMAIC)
- Interview researchers and write about their work related to the mission of Center for a quarterly newsletter
- Assist the Business Manager with Center activities, including forums and conferences

Ivy Tech Community College **08/2009 - 01/2010, 05/2011-Present**

A community college that serves the state of Indiana and helps students earn technical and associate degrees

Position: Math and Physics Tutor
Duties:

- Assist community college students in learning objectives for various levels of math, from basic algebra, statistics and calculus, introductory physics courses and accounting
- Problem-solve to explain material in a manner that each individual student may be able to build confidence and understanding of materials
- Have seen improvements of 40% or more on exams scores from working with students

Army Research Laboratory **07/2010 – 08/2010**

A US Department of Defense research facility, located in Adelphi, Maryland, just outside of Washington DC

Position: Lab Technician (STEP program)
Duties:

- Research common contaminants of both PEM and AAEM fuel cells.
- Apply Rotating Ring Disk Electrode (RRDE) Electrochemical (EC) testing,
- Found that low concentrations boost the performance of non-Pt catalysts by 5-10% in an alkaline environment, which could lead to lower cost and higher durability in fuel cell technology
- Present and discuss research at a laboratory forum

University of Toledo-Department of Physics & Astronomy **08/2007 – 08/2009**

A university located in Toledo, Ohio with about 20,000 students

Position: Graduate Teaching and Research Assistant
Duties:

- Teach recitation courses for Physics 2070,2080 & Physics 2070 (lab)
- Work with students on a classroom/individual basis and subsequently earned very high/positive evaluations from students in these courses
- Perform spectroscopic ellipsometry on thin film CdTe photovoltaics
- Present a poster at the IEEE 2009 PVSC Conference in Philadelphia
- Write a master's thesis based on this research (Pending defense)

Ball State University-Department of Physics & Astronomy **09/2003 – 05/2007**

A university located in Muncie, Indiana with about 20,000 students

Position: Planetarium and Research Assistant
Duties:

- Research binary star systems, including a research trip to Kitt Peak, Arizona to work on a 1-meter telescope
- Present results in department and at an all-campus symposium

- Research, write and begin production of a planetarium show about binary star systems with professor in the Physics and Astronomy Department
- Use Photoshop and Vegas Video to post-produce planetarium shows
- Organize the complete lay-out of a planetarium production

Education:

Bachelor of Arts, 2007
Ball State University *Muncie, Indiana*
Major: Physics
Minors: German, Astronomy
GPA: 3.5/4.0

Masters of Science, 2011
IUPUI *Indianapolis, Indiana*
Major: Technology
(Fuel cell research)
GPA: 3.8/4.0

Masters of Science, ABD
University of Toledo *Toledo, Ohio*
Major: Physics
(Photovoltaic research)
GPA: 3.5/4.0

Professional Qualifications:

- CLRA (College Learning and Reading Association) Advanced Tutor Certification
- Proficient in Microsoft Office package
- Proficient in Adobe CS5 package (including Premiere video editing, Contribute website editing and Photoshop),
- Proficient in C++
- Proficient in various lab analysis tools such as: MatLab, WVASE, MultiStat, CorrWare and Origin
- Proficient in both Microsoft and Linux operating systems

Awards:

- **Engineering Young Entrepreneurs Scheme (YES), regional heat winner,** Coventry, UK, May 2012
- **Baker Student Award for Fuel Cell Research, honorable mention,** Fuel Cell Seminar, San Antonio, TX, October 2010
- **Outstanding Senior Award,** Ball State Dept of Physics and Astronomy, May 2007
- **McGaughey Leadership Scholarship,** Academic Year, 2005-06
- **Presidential Scholarship,** Academic Years 2003-04, 2004-05, 2005-06, 2006-07
- **Indiana Space Grant Consortium Scholarship,** Academic Years 2005-06, 2006-07

Professional Conferences:

- **Fuel Cell Seminar,** San Antonio, TX, October 2010
  - **Poster Title:** ***Membrane Electrode Assemblies (MEA) for the Alkaline Anion-Exchange Membrane (AAEM) Fuel Cell***
- **IEEE PVSC Conference,** Philadelphia, PA, July 2009
  - **Poster Title:** ***Through the glass analysis of CdTe Solar Cell by Spectroscopic Ellipsometry (SE)***

Professional Memberships:

- **Golden Key International Honour Society Member,** October 2010 – Present
- **Sigma Pi Sigma,** National Physics Honorary Society, April 2005- Present

Activities and Interests:

- **Energy Club at IUPUI** – Founding member, Secretary/ Treasurer, Spring 2010-Spring 2011
- **Society of Physics Students**– President, Spring 2004-2007

References: Available upon request.