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Profile Interview With Sabine Brunswicker

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Profile Interview With Sabine Brunswicker

Cover Page Footnote

Profile Interview with Sabine Brunswicker

PROFILE INTERVIEW WITH SABINE BRUNSWICKER

Jia Lin Cheoh, *College of Science*

STUDENT AUTHOR BIO SKETCH

Jia Lin Cheoh is a third-year undergraduate student in the Department of Computer Science at Purdue University, working with support from a national fellowship award. She was an independent study student under Dr. Sabine Brunswicker, working on the Purdue IronHacks for the past two years. She enjoys guiding students and working as a software developer on the Purdue IronHacks platform (www.ironhacks.com) with Dr. Brunswicker in HONR 299 and TECH 499 on open data hacking. Her team contributed to multiple novel web applications developed by students from various backgrounds.

FACULTY BIO SKETCH

Dr. Sabine Brunswicker is an associate professor of innovation in the Department of Technology Leadership Innovation at Purdue Polytechnic Institute. She is also Director of the Purdue Research Center for Open Digital Innovation (RCODI), Director of Research of the Joint Purdue-Tsinghua Center for Innovation (JPTC), and a faculty fellow at the Purdue Policy Research Institute. Prior to joining Purdue University, she was Head of Open Innovation at the Fraunhofer Institute of Industrial Engineering in Stuttgart, Germany. Dr. Brunswicker's motivation in research and teaching led her to join Purdue University as a professor in the Department of Technology and Innovation. As a computational social scientist, her work focuses on designing and examining the systems that support open digital innovation and their social behavioral impact.

Dr. Brunswicker has won many awards throughout her career, including runner-up for the Emerging Scholar Award World Open Innovation Conference, ESADE Business School, Spain; the John P. Lisack Early

Career Engagement Award, and Top Researcher 2012 of Fraunhofer Society. Her success is not limited to research. She spreads an aura of infectious energy to every soul she meets and is often described by students as the professor with “too much energy.” Dr. Brunswicker attributes her achievements to continuous learning and the spirit to persist during hard times. She is the founder of Purdue Ironhacks, a unique eight-week, iterative active-learning program, in which students develop web applications to solve societal challenges. The Purdue IronHacks initiative is supported by the National Science Foundation and external partners including Red Hat and Socrata.

SOLVING SOCIETAL CHALLENGES THROUGH ACTIVE LEARNING

Dr. Brunswicker's ability to inspire others for the betterment of society is an accurate reflection of her mentoring style. After working as a researcher in the Fraunhofer Institute, Germany for several years, she realized her passion in educating future generations and encouraging them to go outside their comfort zone to reach greater heights through her leadership skills and life experiences.

Figure 1 (banner image, above). Dr. Sabine with students from Universidad Nacional de Colombia at the IronHacks Award Ceremony.

Figure 2. Dr. Brunswicker with a few of her students after the completion of IronHacks.

Dr. Brunswicker says:

Being the eldest child, I used to lecture a lot on how things should be done, so my father would say I should become a professor. After that, I worked in Fraunhofer as a researcher, and then as Head of Open Innovation in Fraunhofer. That's where I found my passion in academia—in making a difference in others' lives through education. We should all be learning and exploring new things, and life will surprise us with unexpected results. The Purdue IronHacks is based on this mantra—learn, try, and succeed.

Dr. Brunswicker conducts the service-learning classes HONR 299 and TECH 499 on open data hacking. In these courses, she encourages collaborative and active-learning concepts where students learn from other students during the Purdue IronHacks competition. A service-learning project like the eight-week iterative hacking program initiated by Dr. Brunswicker encourages all students across different majors to get their hands wet with apps development using open data to solve civic challenges. For example, students will develop apps to help citizens determine crime rates in the nearby area. Dr. Brunswicker also partnered with Universidad Nacional de Colombia located in Bogota, Colombia, to launch the hacking program internationally.

To date, the Purdue IronHacks has involved about 500 students, which has led to approximately 500 open data apps available openly on GitHub.

REAL-WORLD EXPERIENCE THROUGH PURDUE IRONHACKS

Using service learning as an instructional approach allows students who participate in Purdue IronHacks to explore skills beyond their majors. Through the collaborative learning approach, students from different backgrounds contribute to solving societal challenges regardless of their experiences in web programming. The social coding environment in Purdue IronHacks enables students to learn bit-by-bit and contribute to civic engagement step-by-step. In these service-learning classes, experienced student developers guide students with no development experience in creating apps that will make a civic impact. For example, students who participated in the IronHacks competitions in previous semesters would find IronHacks an exciting way to learn how to program apps that help the citizens find a safe housing area. Excitement from participation often ignites students' passions to pass on what they learned, resulting in joining the Purdue IronHacks development team as developers for programming tutorials or as mentors for IronHacks participants. Service learning is no easy feat, but it gives students a chance to take learning to the next level. Dr. Brunswicker emphasizes the importance of persistence and a willingness to try new things when students approach Purdue IronHacks with no background experience. Additionally, Dr. Brunswicker stresses the importance of hard work and creativity during the Purdue Ironhacks competition.

The service-learning projects from Purdue IronHacks do not end once the classes do. The students are free to take their projects to the next level. Upon visiting the GitHub page of Purdue IronHacks at github.com/RCODI, the traces from passionate students who continue to develop their apps leave us truly amazed at the impact IronHacks has on the entrepreneurial ventures of young minds. A few participants of IronHacks went as far as sharing the ideas of the web applications they developed during the IronHacks contests on social media, such as YouTube. For example, one of the winners of the past Purdue Ironhacks, Daniel from Universidad Nacional de Colombia, shared the source of inspiration of his housing app on YouTube (Pinzon, 2017). Some students think it is impossible to make an impact in a field they are not familiar with, but the Purdue IronHacks continue to provide evidence that as long as students are willing to learn, the opportunities are infinite.

Dr. Brunswicker collaborates with many stakeholders to make Purdue IronHacks a success; partner input is critical in ensuring their success. She incorporates design and implementation ideas from various sources to ensure that the service-learning project is both practical and beneficial. After each round of Purdue IronHacks, Dr. Brunswicker and the team make a point to connect with past participants to listen to their feedback, as she deeply understands the importance of communication in a service-learning project. She and the team organize a post-hack feedback session during the Purdue IronHacks awards ceremony so participants have the chance to voice their opinions. Further, 20-minute interviews are conducted among the winners of Purdue IronHacks to learn about the students' experience and receive any suggestions for improvement.

REFLECTION AND CONCLUSION

At the end of the interview, Dr. Brunswicker encourages students and faculty who are interested in promoting service learning to look beyond their field of expertise for inspiration. The ideology of thinking outside the box is critical to the success of a service-learning project. When Dr. Brunswicker first launched Purdue IronHacks, attracting students to join the program was a challenge. She and the team found ways to offer incentives, such as cash prizes and exciting internship opportunities, to the winners of the Purdue IronHacks. Dr. Brunswicker also

implemented the community spirit award as a means to encourage participants to remain active in the community by asking and answering questions on the platform of Purdue IronHacks throughout the competition. She also notes that through service-learning projects like Purdue IronHacks, students will not only get the chance to enhance their resumes, but also experience the joy of creating products that will have community impact. Her advisees and students are often encouraged to take part in service-learning activities similar to Purdue IronHacks, and she has witnessed multiple instances where students were grateful they did. For example, two of her PhD advisees, Marlen Promann and Jesus Enrique Aldana Sigona, were inspired during their time as the user experience judges for Purdue IronHacks to shape their research work in user-centric designs and user behaviors in communities.

Dr. Brunswicker notes, "When I see students coming back wanting to work with me after graduation, I see that as a success in the mentoring and teaching style, and in particular the impact from service-learning projects like the Purdue IronHacks."

Dr. Brunswicker's work in Purdue IronHacks enabled her to research the impact that open innovation has on the community she cares about. Her recent article with Dr. Micheal Prietula at Emory University, titled "Re-Use and Patterns of Digital Innovation in Open Crows," examines how multistaged contests and transparency affect participants' performance. To continue her passion in encouraging openness in innovation, she continuously initiates the effort to work with private sectors and government organizations to promote the release of open data for the use of developers, and ultimately to benefit society. She is delighted that Purdue IronHacks has inspired hundreds of students to make meaningful contributions to the community through the open-source software they created during the competition.

REFERENCE

Pinzon, D. (2017, Nov. 26). Explicación—Proyecto Ironhacks (2017-02 grupo 1) [Video file]. Retrieved from www.youtube.com/watch?v=H2zs_-tjomA

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Figure 3. Dr. Sabine with one of the winners of Purdue IronHacks.