How did this book come about?

There is growing interest worldwide in academic programs and cocurricular activities focused on social innovation and global sustainable development. While such programs and student clubs take on many different names and forms, they share a common goal of actively working with partners to develop and implement practical, innovative, and sustainable solutions to challenges faced by communities in the United States and abroad. Along those lines, my program in Humanitarian Engineering and Social Entrepreneurship (HESE) at Penn State engages students and faculty from diverse disciplines in technology ventures for resource-constrained environments. HESE is one of many programs that provide STEM (Science, Technology, Engineering, Math) students a transformative experience and develop the skills, competencies, and mindsets necessary to launch entrepreneurial ventures and pursue careers in sustainable development. Approximately half the students in HESE are STEM students; the rest come from every other college across campus. Irrespective of their major, these students share a common interest in harnessing the power of science, technology, engineering, mathematics, and design to find practical and sustainable ways to improve the human condition. They value rigorous data-driven and evidence-based approaches to create and deliver new products and services that transform ways of thinking and doing. They value the primacy of trusted relationships and ethical reflection to ensure that the self-determination of all partners is never compromised.

When graduation comes around, the big question facing students, faculty advisors, and parents is: what’s next? After pursuing immersive and engaged experiences in academic settings, these passionate, hardworking students are not as excited about taking up well-paying but arguably monotonous jobs in large organizations. They want to directly see the impact of their work rather than designing a widget in a cubicle and becoming another cog in the corporate wheel. While an increasing number of students are starting their own ventures, there are many others who just cannot, or do not want to, start a new entrepreneurial venture and life. Moving to a developing country and jump-starting a social venture poses umpteen professional and personal challenges as compared to undertaking similar endeavors at home. The entrepreneurial pathway is even less attractive when there are student loans to be paid, family and romantic relationships to be respected, and attractive job offers in hand. The question is: what are the other career pathways for these students who want to “change the world”?

While (social) entrepreneurship is the raison d’être of some academic programs, development of an entrepreneurial mindset is emphasized by most of them. The rationale is that students take their entrepreneurial mindset to diverse professions and sectors, finding innovative solutions to compelling problems. While participating in entrepreneurial programs, some students might realize that entrepreneurship is not their cup of tea while others may be drawn to roles and functions in the larger innovation ecosystem. They might realize that, for the problems they care about most, an entrepreneurial venture is not the right approach. Rather, a large corporation, a United Nations agency, or being an elected legislator might afford them a stronger platform to influence change. Few students, and even fewer parents, faculty, and career counselors are familiar with career pathways in global sustainable development and social innovation. With the help of one hundred innovator profiles and fifty-four expert briefs on a wide range of relevant topics, Solving Problems That Matter (And Getting Paid For It) illuminates the smorgasbord of career pathways that prioritize social impact. It educates readers about the ins and outs of the various organizations participating in the broader social innovation ecosystem, and the academic, cocurricular, and professional competencies that help prepare individuals for impact-focused careers. Finally, it encourages readers to think through compensation, career advancement, and the personal implications of career choices.

HESE has three goals: impact, impact, and impact. Impact happens through the entrepreneurial ventures related to food security and global health in several countries; through the research publications in refereed journals and conference proceedings; and, most importantly, through the students who spend a semester or four years working on HESE ventures. These students are HESE’s most important export, and it is extremely important for me to propel them on their desired career path. With the intention of advising my students better, three years back I set out to understand career pathways in this arena. My initial goal was to speak to twenty-five to thirty professionals in well-known organizations where many of my students aspire to work. I quickly learned that the more prestigious the organization, the harder it is to find people to connect with and to have a longer discussion about what they do and
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how they got there. Over three years, and with the help of many supporters, I interacted with hundreds of innovators working on a wide range of development challenges across diverse sectors, organization types, and roles within them. I found most innovators to be open, down-to-earth people who were happy to share their work and journey. They graciously agreed to participate in this project and even connected me with their contemporaries. The two key takeaways across these conversations were (1) STEM professionals can be found across all kinds of impact-focused organizations and units (one just needs to look closer), and (2) every single innovator had a unique trajectory to arrive where they are now.

The innovators profiled in this book either have a formal education in the STEM fields or work on challenges that call for STEM competencies. For example, Sebastian Africano has his formal education in business but works on improved cookstoves across Africa and Latin America. Every single innovator’s work represents a valid, compelling career path for a STEM professional. This book takes a broader view of STEM and also includes the health sciences, life sciences, medicine, geosciences, and the agricultural sciences. The profiles capture each innovator’s educational background, motivations, job functions, a day in their life, major inflection points in their careers, future outlook, and their advice for students. The innovators come from diverse organizations—small and large for-profit corporations to various kinds of nonprofits, academia, consulting companies, governmental agencies, UN agencies, and newer forms of organizations that have recently come about to advance global sustainability. Professionals at various phases in their career are included to demonstrate how certain kinds of advances can come about in a few years while others require decades and centuries.

Alongside the innovator profiles are fifty-four expert briefs, penned by highly experienced (and extremely busy) professionals, that provide candid, poignant insights into a wide range of relevant topics. The briefs in “Part I: STEM for Social Innovation: The Time Is NOW!” capture essential trends and the importance of the STEM fields in advancing the human condition. “Part II: Organizations in the Social Innovation and Sustainable Development Arena” educates readers about the various types of organizations, how they work, and their strengths and limitations. These practical insights deconstruct the glamour, myths, and misconceptions of organizations in order to help readers make informed career decisions. The “Professional Preparation” part discusses various undergraduate and graduate degrees as well as professional development programs, such as the Peace Corps and Fulbright Scholarships. The “Professional Competencies” part delves into the significance of communication skills, fieldwork, and other competencies to impact-focused careers and provides actionable insights into how readers can develop them. The “Finding Your Niche” part has a series of briefs on how to break into, transition into, and transition out of impact-focused careers. Finally, the “Personal Considerations” part takes a deep dive into salaries, benefits, work culture, legal logistics, and special considerations for the LGBTQA community.

Solving Problems That Matter (And Getting Paid For It) seeks to accomplish three things. The first goal, of course, is to educate students, parents, faculty, and career counselors about career pathways and strategies in social innovation and sustainable development. The second objective is to elucidate the “market pull”—the smorgasbord of opportunities available to students and young professionals who have engaged in intensive and immersive engaged scholarship and sustainable development programs. While many faculty members and administrators view programs like HESE as a mechanism to develop soft skills (and assist in program accreditation), that is not why the program exists. H ESE strives to address global development challenges while preparing a cadre of social innovators and sustainable development professionals. These career profiles serve as a recruiting tool for academic, curricular, and professional development programs struggling to articulate their purpose and position themselves in the university. The objective is to collectively alter the perception of such efforts from a “save-the-world mission with students going to poor countries to save people,” to a rigorous, multidisciplinary, integrative discipline that inspires students and faculty to work shoulder to shoulder with communities to deliver impact. The third goal of this book is to help with recruiting and retaining women and underrepresented groups into the STEM fields. The work and stories of the innovators profiled in this book bring to life the relevance and importance of the STEM fields in making the world a better place. This outcome is perfectly aligned with NAE’s “Changing the Conversation” mission of changing the perception of engineering (and by extension, STEM) to a caregiving profession vital to advancing the human condition.

While this book chronicles a bewildering array of career paths, it certainly does not capture every possible job profile and trajectory. Neither does it capture how every organization works (or does not work). Such a book would take ten more years of research and have to be carried around in a wagon. It would also be obsolete by the time it was published. This book is not meant to be a “how-to” manual or an encyclopedia either. Rather, it is a diverse mosaic of perspectives, stories, and experiences that provides hundreds of insights into sustainable development careers. It provides a compelling starting point to finding yourself and determining the path forward, into the extremely exciting, somewhat intimidating, and rapidly evolving social innovation and global sustainable development ecosystem.
Why should you read this book?

Like millions of STEM students and professionals around the world, you want to channel your education, expertise, and energy into tangibly improving the human condition. You volunteered at the local food bank all the way through high school, did a mission trip to paint an orphanage in Guatemala, and spent two years in college designing a solar lantern for farmers in Africa. And now you are hooked. This is what you want to do for the rest of your life. But how do you change the world—and get paid for it? Should you pick up your baggage, move to the lovely little town of Arusha in northern Tanzania, and look for opportunities with the aid agencies there? Should you start your own social venture or nonprofit? Should you go back to school, get a PhD in biomedical engineering, and find a position at the Gates Foundation? You do not know whom to ask or where to look for more information on impact-focused careers.

This book will give you a comprehensive, compelling first look into the social innovation and sustainable development space. Here are the kinds of things you will learn, think about, and reflect on as you review the innovator profiles and digest the expert briefs.

#1 The Sheer Diversity of Challenges Facing Our World

Embrace the variety and complexity of sustainable development challenges in different parts of the world. Few, if any, challenges have singular “silver-bullet” solutions. The innovator profiles shed light on the specific problems that game changers are trying to solve in pursuit of the larger challenges. Their profiles illustrate how culture and context inform the way in which each problem is approached and each solution is designed and implemented.

#2 The Different Levels of Abstraction for Development Innovations

You can work on a challenge (say, global health) through the United Nations, the national government, a regional nonprofit, a private sector actor, or one-on-one with rural communities—and every approach is equally valuable. Innovations at higher levels of abstraction can have a much larger impact but are harder to assess, iterate, and implement. You might not even know if the approach is actually working! On the other end of the spectrum, working directly with people can give you immediate feedback and a firsthand view of the human impact, but that impact is constrained to a smaller population.

#3 The Multiplicity of Approaches to Addressing Global Problems

You can address a challenge (say, rural electrification) through policy modifications, advocacy, activism, educational interventions, technological tools, or business operations. Some methods involve direct action while others take an indirect approach by influencing external stakeholders. Some approaches maintain the status quo, provide temporary solutions, or lead to incremental improvements while others are truly disruptive and transformative—solving the problem once and for all.

#4 The Variety of Sectors and Nexuses

The social innovation and sustainable development space is often grouped into sectors such as water, energy, food security, health, education, and human rights. Despite this separation, challenges (and solutions) related to each sector are highly interconnected. Innovators are increasingly focusing on intersections (nexuses), such as the terrorism-trafficking nexus or the water-energy-food nexus.

#5 The Range of Organization Types

The world is full of a bewildering number of organizations interested in social development: government agencies, nonprofits, large corporations, rural startups, and a long list of emergent fourth sector organizations. These organizations offer different kinds of resources and pursue different opportunities and platforms to effect social change. They comply with different legal, operational, and tax regimes across different countries. Some have formal work environments with explicit dress codes while others encourage dogs in the office and offer free backrubs on Wednesdays.

#6 The Different Roles within Organizations

Organizations are composed of employees working together in a structured, collaborative manner—but to many different extents on both fronts. Employees assume a variety of roles, from working directly with people in the field to doing back-office paperwork, to chasing grants and donations to keep the organization alive. There are executives,
technical experts, grant writers, managers, coordinators, and as many other jobs as necessary for the organization to accomplish its mission. Some roles afford considerable freedom to explore and define work individually while others are fairly specific with structured responsibilities and processes. The work, and working style, of a coordinator in one organization may be very different from her counterpart at another one. All organizations have a unique culture and style of getting things done.

#7 The Diverse Motivations and Incentives for Engaging

Why do people work in the social innovation space? For some, it is just a job; for others, maybe, it is a more lucrative job. Some love the challenge, some want to give back, while others are looking to “save” or “rescue” people. (Do not do this—empower and cocreate with your partners.) Some may engage to satisfy their ego, to earn bragging rights, or to discover the thrill and adventure of problem solving in an exotic locale. And then, some believe in the Ubuntu philosophy, “I am because we are” (nudge, nudge). There are more reasons than there are people. This book helps you understand and articulate your own reasons; doing so can keep you grounded and help you make better career decisions.

#8 Essential Personal and Professional Competencies, and How to Develop Them

What personal and professional competencies do you need to be successful in this space? How can STEM students prepare for impact-focused careers? Different roles and organizations need different educational levels, expertise, and prior experience. Some organizations do not care about educational qualifications as long as you can get the job done while others have prescribed educational requirements for each role. Some positions may need specific competencies in research methods, engineering design, project management, conflict resolution, or team building—with or without additional STEM skills. There are several graduate and professional degree programs, fieldwork experiences, and fellowship opportunities to cultivate essential competencies and gain relevant experience to help break into the field. One series of expert briefs shares personal experiences and poignant insights on these educational and professional development opportunities.

#9 Compensation and Personal Considerations

Some positions might be career-long, some for six years, and some for just six weeks. Some jobs may involve no travel while others may keep you traveling nonstop throughout the year. Travel might be paid for by the organization and include perks like business-class flights, or you might be expected to cover travel expenses from your own salary. For doing exactly the same kind of work, your annual salary might vary between $25,000 and $250,000! And then, there are benefits, retirement plans, and career advancement opportunities to think about. A dedicated brief deconstructs and demystifies how compensation and benefits work. It also clearly spells out the unknown unknowns, including the kinds of financial, logistical, and legal parameters to think about when negotiating any sort of gig in a developing country.

#10 Inspiration—Hundreds of Times Over

There is not one divine or well-trodden path to a career in social innovation. That would be scary! While journeys share some commonalities, every single innovator profiled in this book carved their own unique path. Each expert brief sheds light on an important facet of working in this enormous, constantly evolving space. Your own personal and professional quest to improve the human condition is not a sprint on the running track; it is a marathon through the jungle. This book seeks to inspire you, share some nuggets of wisdom, and propel you into this exciting arena to solve problems that matter.

On behalf of the innovators profiled, the expert brief contributors, and the editorial team, it is a distinct pleasure and honor to present this book.

Let’s get going!

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