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PROFESSIONAL EXPERIENCE

Kaz Karwowski joined the Rice Center for Engineering Leadership (RCEL) as Executive Director in July 2013 after 7 years at MIT. Prior to joining MIT, he served in a 20-year military career in a series of increasingly responsible leadership positions, leading, training, and managing teams with diverse abilities and experience levels. For the last 10 years he has been developing and operating emergent leadership development programs on highly competitive college campuses. Mr. Karwowski has been consistently recognized for outstanding collaboration, leadership and management skills, and his ability to communicate across multiple disciplines to provide and encourage effective professional working environments.

Executive Director, Rice Center for Engineering Leadership
Rice University, Houston, TX

July 2013- Present

Plans and leads strategic leadership development initiatives within the Rice Center for Engineering Leadership (founded in 2009 with a \$15 million gift from John and Ann Doerr), establishing RCEL as a nationally recognized innovator in the field since 2013. The Center is housed in the George R. Brown School of Engineering the #19 undergraduate engineering school in the U.S. Manages day-to-day center administration, including all academic, operational, financial, and human resources activities. Supervises targeted communications program and an active events and speakers.

- Oversees Texas' first four-year undergraduate "Certificate in Engineering Leadership" program. Helmed the team that designed the offering, and successfully led efforts to secure official ratification by the Rice Faculty Senate in 2014. Formulates and manages ongoing assessment tools. Supports Master's and Ph.D. level education through graduate level courses in high-level communications.
- Expanded RCEL course offerings from 4 to 10 in two years and faculty and staff hires from 4 to 16. Supervises team members in implementing the Certificate's 10 credit hour curriculum of core courses, and oral/written communication coaching; co-instructs experiential "Leadership Labs."
- Led the five-year review of the curricular and pedagogical revisions of the Certificate in Engineering Leadership, culminating in a new streamlined approach to teaching leadership development to engineers. Implemented and executed change management based on the findings.
- Worked closely with the RCEL Faculty Director to create a Master's in Engineering Management and Leadership (MEML) Degree. The degree prepares engineers to lead organizations, while inculcating in them the need to help their organizations adapt to the digital transformation happening in the fourth industrial revolution. The degree was approved by Rice University in May of 2021.
- Developed and implemented multiple educational training events for professionals, college and high-school students using cutting-edge multimodal train mediums that incorporated virtual reality, online, and blended learning maximizing efficiency and efficacy of the training.
- Actively engages local industry, government, and community stakeholders to promote joint leadership programming and interests. Identifies and seeks sources of funds, raising over \$1.5 million in additional support for RCEL and Rice. Regularly seeks out additional funding and advocates for the center, center personnel, and its priorities.
- Established ongoing relationships with international engineering leadership programs at Liverpool-John Moore's University and the National University of Science and Technology-Moscow, resulting in student exchange opportunities of engineering undergraduates. Keynote speaker at the 2016 IEEC: **International Entrepreneurship Educators Conference**
- Developed internship opportunities between students and industry stakeholders, with 100% of RCEL student participants acquiring appointments since 2013. Designed new course offering to coach student interns.

- Collaborated to create Rice Elite Camp, which later became Rice Elite Tech Camp. The camp originally taught high school students, leadership and STEM skills preparing them for college. In 2020, worked closely with the Faculty Director to redesign the camp to adapt to the COVID-19 pandemic and transitioned to an online format that focused on computer programming and coding. The camp is now multi-modal and includes leadership and technical topics that prepare high school students for college. Over 700 students have attended Elite camp.
- Collaborated with other university leadership programs (Northeastern, Tufts, University of Toronto, UC San Diego, etc.), in planning the first National Conference on Engineering Leadership, hosted by Rice University in 2014 (attended by over 230 educators, students and industry leaders representing 28 universities and companies from across the country and Canada).
- Sponsors fifteen or more undergraduate student clubs and design teams each year, selected through a competitive application process, with both RCEL financial support and in a personal advisory role.
- Supports active RCEL/ MEML graduate student committee, which plans graduate student mentoring, career workshops, and professional education seminars.
- Superintends K-12 outreach program that works closely with Houston ISD to provide small-scale STEM programs for local schools, while also offering leadership opportunities for Rice undergraduates and helping to encourage interest in STEM higher education and careers.
- Supports Rice entrepreneurship through active involvement in the establishment and ongoing programming of Rice's first start-up accelerator – a twelve-week immersive summer experience that has generated 54 companies and raised over \$3 million in investment funding.
- Serves as National Instructor in the NSF-funded I-Corps program, connecting university faculty and student scientists with the greater Southwest business community in testing their funded research for potential commercial application. Works with DOD funded companies to create solutions aligned with DOD priorities.
- Created the first 100% online Certificate in Engineering Management and Leadership with COURSERA, featuring three specializations: Leadership Development, Communication, and Project Management. Co-teaches Project Management modules. Over 32,000 students have completed the courses with over 165,326 enrolled.
- Advised Rice University how to connect the research currently being conducted at the university with the DoD's top six priorities: long-range precision fires, next-generation combat vehicle, future vertical lift, mobile & expeditionary network, air/missile defense, and soldier lethality during their briefing to General John Murray, the Commander of the U.S. Army Futures Command. The result of the brief is an agreement with Rice University and U.S. Army Futures Command to work on cutting-edge technologies.
- Serves on the Boards of Rice Alliance for Technology & Entrepreneurship and the Center for Ethical Leadership at the University of St. Thomas, Houston.

**Innovation-Corps (I-Corps) Faculty
National Science Foundation**

March 2015-Present

- The NSF I-Corps is an entrepreneurship and technology commercialization-training program for the nation's leading scientists and engineers in academic research. As an instructor at the Southwest NSF hub (SW I-Corps), one of seven national nodes for the program, I coach professors and researchers in their search for commercial applications to their research.
- SW I-Corps is a regional program designed to foster, grow and nurture an innovation ecosystem in the South-West Region of the United States. The program is sponsored by the National Science Foundation (NSF) and jointly run by the University of Texas at Austin, Rice University, Texas A&M University and Texas Tech University. The program provides real world, hands-on training on how to successfully incorporate innovations into successful products. The ultimate goal is to help program participants create a new venture or licensing opportunity.
- Participants in SW I-Corps programs engage extensively with industry. Over the course of the I-Corps programs,

teams talk to customers, partners, competitors, and other market stakeholders. During this time, teams seek to define a solid product-market fit while building a viable business model for their innovation.

**SBIR “Beat the Odds” Bootcamp Faculty
National Science Foundation**

March 2015-Present

- Based on the NSF I-Corps program, the SBIR Bootcamp is an entrepreneurship and technology commercialization-training program for the nation's leading scientists and engineers in academic and commercial research. As an instructor in the bootcamp, I coach Phase I, SBIR awardees on the commercial applications to their research or technology.
- The program provides real world, hands-on training on how to successfully incorporate innovations into successful products. The goal is to help program participants create a new venture or licensing opportunity.
- Participants in the SBIR Bootcamp engage extensively with industry. Over the course of the program, teams talk to customers, partners, competitors, and other market stakeholders. During this time, teams seek to define a solid product-market fit while building a viable business model for their innovation.

Engineering Leadership Specialist/ Director of Operations-

August 2009- June 2013

Massachusetts Institute of Technology, Gordon Engineering Leadership Program, Cambridge, MA

- Responsible for ideating, developing, and creating experiential training “Engineering Leadership Labs” for the Gordon Engineering Leadership Program- MIT. The labs based on basic leadership principles, and the Gordon “Capabilities of Effective Engineers” challenged students’ decision-making and leadership skills while providing them assessments of their performance in the post-mortem.
- Developed and promoted a re-architected design for the Gordon Engineering Leadership Program resulting in a 300% increase in the number of students eligible, which in turn increased student enrollment by over 200% changing the dynamic of the program.
- Developed a comprehensive recruitment campaign with the Director of Marketing that recruited quality student, athlete, leaders resulting in a 300% increase in the number of students applying to the Gordon Engineering Leadership Program-MIT in 2010. The campaign made the Gordon Program larger than some departments at MIT and is still in use today.
- Collaborated with other engineering leadership programs (Northeastern, Tufts, University of Toronto, UC San Diego) to share best practices on how to incorporate engineering leadership into existing engineering curriculum. This collaboration led to the creation of the “Lead” focus group inside the American Association of Engineering Educators.
- Developed multiple training “leadership modules” for existing engineering courses, and coached instructors on how to incorporate them into their lesson plans, encouraging a shift from traditional modes of teaching to more dynamic and experiential modes that encourage the use of technology.
- Developed course curricula for engineering leadership subjects designed to highlight and teach the “Capabilities of Effective Engineering” based on both the Sloan School of Management Leadership Model, and the Gordon Engineering Leadership Capabilities.
- Developed and presented 12 Engineering Leadership Modules during a month-long course for Skolkovo Tech (SKTech) graduate students.
- Assisted development of the curriculum and taught 80 graduate students during the three credit Special Seminar in Management: Management and Leadership at MIT’s Sloan School of Management “Leaders for Global Operations Program” for five consecutive years (2007-2011).
- Regularly met with representatives from various engineering companies, such as Apple, Lockheed Martin, Kaz, Raytheon, AMD, and Florida Power and Light.

- Managed the day-to-day office operations of the Gordon Engineering Leadership Program. MIT is the #1 ranked engineering school in the U.S.

Senior Military Instructor MIT U.S. Army ROTC program
Massachusetts Institute of Technology, U.S. Army ROTC, Cambridge, MA

January 2007- August 2009

- Coordinated the daily training and duties for 16 staff; coordinated Military Science Instruction; performed duties as a Network Administrator; Test Control Officer; Harvard University, Tufts University and Wellesley College Recruitment and Liaison Officer; professionally developed and commissioned Second Lieutenants into the United States Army.
- Created training schedules, coordinated land, ammo, and range usage, coordinated air support, and executed multiple training events in and around Ft. Devens, MA and Hanscom AFB, Concord, MA. Including, transportation of equipment and military weapons in compliance with state and federal regulations.
- Responsible for coordinating, planning, and executing multiple recruiting events to include; college fairs, open houses, and new student orientation; coordinated recruitment advertising and screening of candidates; developed marketing products specific to each university market and managed the disbursement of those products to each university.
- Developed multiple cutting-edge outreach programs that decreased costs, and increased exposure to potential scholarship applicants; assisted with establishing organizational long-term planning and goals.
- Effectively recruited quality student, athlete, leaders which resulted in a 15% increase in the number of students in the MIT ROTC program in 2007.
- Assisted in the curriculum development of a three credit Special Seminar in Management: Management and Leadership at MIT's Sloan School of Management "Leaders for Global Operations Program" for five consecutive years (2007-2011).

Operations Manager/S-3 Operations Officer
4th Battalion 23rd Infantry, United States Army, Baghdad, Iraq;

January 2006 -December 2006

- Managed a centralized operations center that received and transmitted sensitive information via multiple communications mediums; supervised and coordinated the security and protection of a major Iraqi Security Force facility; ensured the compliance of a \$30 million construction contract; oversaw five different programs of instruction for the Northern Iraqi Regional Training Academy in an austere combat environment.
- Established and managed a training academy that included a tenant training battalion, an infantry battalion, and an Iraqi Police training detachment consisting of over 600 personnel. The facility included a small arms range and a small MOUT facility. Secured and managed all ammunition and supplies for U.S. led training at the facility.
- As the first person in 4-23IN in 2003, assisted in establishing the developing doctrine for STRYKER infantry operations as one of the first organizations to field the new maneuver platform.
- Responsible for the establishment, and implementation of the security and protection of a U.S. Army operational base protecting an airfield, living areas, and all pertinent infrastructure worth over \$250+ million in Tal Afar, Iraq.
- Led team of 10 personnel with full responsibility for work assignments, scheduling, performance review, disciplinary action, and long-term career planning/development/promotion.

Platoon Sergeant/ Senior Advisor**April 2003- January 2006**

4th Battalion 23rd Infantry, United States Army, Ft. Richardson, AK/Mosul, Iraq;

- Led team of 51 personnel with full responsibility for training, work assignments, scheduling, performance review, disciplinary action, and long-term career planning/development/promotion.
- Project Manager for the initial planning and establishment of a 900-person Army Battalion consisting of four Infantry Companies; coordinated for facilities and their renovation, equipment, personnel, IT, and training with minimal staff. Given special permission by the Commander of USARAK, MG Brown to sign for and procure all necessary materials to help create a foothold for the new BN.
- Planned training, coordinated land, ammo, and range usage, coordinated air support, executed training events, maintained the accountability of equipment, and supervised the accountability and maintenance of 4 vehicles worth approximately \$10,000,000.00; maintained an operational readiness rate of over 90% for 2 years; responsible for the annual performance evaluation of 51 personnel as well as the maintenance and accountability of those records.
- Responsible for the deployment of a STRYKER Infantry platoon and all of its equipment to and from Operation Iraqi Freedom without the loss or damage of any item, organized and coordinated all day-to-day operations for the organization.
- Regularly planned and led cooperative combat operations between the U.S. and Iraqi military units. Conducted over 200 combat patrols.

United States Army**July 1989- April 2003**

Prior to 2003, I consistently held leadership positions in various military units in many different locations. Some leadership highlights are:

- Led soldiers in combat during contingency operations in the Persian Gulf War (Operation Desert Storm), Mogadishu, Somalia (**Operation Restore Hope/ “Blackhawk Down”**), and during Operation Iraqi Freedom, as well as during peace enforcement operations in Haiti and Bosnia-Herzegovina.
- Stationed in Ft. Wainwright, Alaska as an infantry squad leader from 2000-2003. Selected as the 2001 NCO of the Year for 1-17th Infantry Battalion.
- Served as a Mountaineering Instructor for the Northern Warfare Training Center at Ft. Greely, Alaska from 1998-2000, Where I taught mountaineering and arctic survival skills to soldiers stationed in Alaska and throughout the U.S. Army.
- Selected over 15 peers to lead a mountaineering rope team for the U.S. Army Mountaineering Team on the Denali (Mt. McKinley) 2000 Multinational Expedition that successfully climbed the tallest peak on the North American Continent with the Nepalese Army.
- I lived on and served at all three U.S. Army bases in Alaska (Ft. Greely, Ft. Wainwright, and Ft. Richardson) I have trained in every training area and utilized most ranges in Alaska. Including, Black Rapids.

EDUCATION**ALM- Management; Harvard University, Cambridge, MA****2010-2012**

Focus on Management and Operations Logistics Management.

BS-BA- Management; Thomas Edison State College, Trenton, NJ**2004-2008**

Focus on Management and Operations

TEACHING EXPERIENCE**Rice University- RCEL 100: Self-Awareness and the Engineering Leader**

The purpose of this course is to prepare students to become future engineering leaders. This course is the introductory requirement for RCEL's engineering leadership certificate. The primary focus is on using a variety of tools to improve

self-awareness and assess specific needs for development both now and in the future.

Rice University- RCEL 200: Personal Development for the Engineering Leader

The purpose of this course is to prepare students to begin planning their leadership development journey with a personal vision in mind. The focus of this course is on those skills engineering leaders will need to identify personal leadership strengths and weaknesses with an objective of creating a set of personal goals directed at instilling a habit of continuous improvement throughout their careers. The course is part of the core requirements for RCEL's engineering leadership certificate.

Rice University- Leadership Action Learning (ENGI 317)

ENGI 317 offers a real-world practicum experience that allows students to practice leadership skills in an applied context. During the semester, students must serve in a primary leadership capacity on a team, project, or another qualifying leadership exercise. In addition to facilitating the technical, management, and/or logistical requirements of the assigned leadership role, each student will participate in an individualized action learning-based model of leadership development, through which he or she must implement a strategic development plan that focuses on one or more designated *areas of potential growth*.

Rice University- Engineering Leadership Laboratory (ENGI 218/219/318/319)

Exposees students to engineering leadership concepts in an interactive, experience-based environment that hones leadership skills. Students participate in guided reflection that focuses on successes and provides opportunities for improvement in a controlled setting. Activities include design/implementation activities, role-play, simulation, case study analysis, and student performance assessments. The curriculum includes both instructor-driven and student-structured content and exercises. ENGI 218/318 is limited to students participating in the Rice Center for Engineering Leadership Certificate Program.

Rice University- Professional Excellence for Engineers (RCEL 241)

ENGI 241 is an applied practicum and internship course that provides guided career and professional development for engineering students in a real-world industrial, academic, research, or another professional context. ENGI 241 prepares students to assimilate quickly and to exceed employer expectations during their internships. Students will develop a functional awareness of the **vision, mission, strategy, and objectives** of the organization, such that they may identify how their interests and skills align with the needs and culture of the company.

Rice University- Engineering Project Management & Leadership Action Learning (RCEL 450)

RCEL 450 provides instruction on the tools, techniques, and leadership characteristics required to successfully execute a project. The course will address the phases of project execution—initiating, planning, executing, monitoring and controlling, and closing as part of the project and the course also offers a practicum experience that allows students to practice leadership skills in an applied context. During the semester, each student will serve in a primary leadership capacity on a team, project, or other qualifying leadership exercises. In addition to facilitating the technical, management, and/or logistical requirements of the assigned leadership role, each student will participate in an individualized action learning-based model of leadership development, through which he or she must implement a strategic development plan that focuses on one or more designated *areas of potential growth*.

Rice University-Engineering Launch Pad-Entrepreneurship (RCEL 440)

Leadership and Entrepreneurship are like skiing...you can understand all of the science behind making the perfectly carved turn, but until you ski down a slope it's only theory. In the past, entrepreneurs were taught to make a business plan and to pitch it to investors, but research has shown that 95% of all new ventures fail because they have a lack of customers, and not due to technological issues. This course will focus on identifying the value proposition a potential venture has for a specific customer segment, and who those customers are and why. Students will be forced to "get out of the building" and interview potential customers to help refine their assumptions based on data. The goal is to help the teams create a scalable and repeatable business model.

MIT-Engineering Leadership Laboratory -ESD.05/.050 (Fall and Spring)

Description: Exposes students to engineering frameworks, models, and cases in an interactive, experience-based environment, and hones leadership skills. Students participate in guided reflection on successes and discover opportunities for improvement in a controlled setting. Activities include design-implement activities, role-play, simulation, case study analysis, and performance assessment of other students.

Developed and taught a module called "Project Team Success" that focused on basic team and project management

skills. The module was offered as a supplement to project-based classes throughout the school of engineering.

Consistently receives MIT instructor ratings of 6.2 out of 7.0 or higher.

PRESENTATIONS/PUBLICATIONS

International Entrepreneurship Educators Conference 2016, Liverpool, UK

Keynote speaker at the 2016 IEEC: Discussed the hypothesis that there is a correlation between leader development training and entrepreneurial success, and shared preliminary findings supporting said hypothesis.

Preparing Engineers to Be Job Makers, Not Job Takers,

The Way Ahead, Society of Petroleum Engineers Magazine, Brian Hassin and Kaz Karwowski

2010 American Society of Engineering Educators National Conference

Presented a workshop on incorporating project-based learning in engineering education. Attendees of the workshop participated in an exercise that provided an example framework they could use as a reference when developing their own project-based classes. The workshop emphasized the importance of students meeting learning objectives, and how to develop exercises that guide them to the desired learning outcome.

Contributed to the development of U.S Army Field Manual 3-97.61-Military Mountaineering. Provided content and served as the subject matter expert for Chapter 10 “Movement Over Snow and Ice.” U.S Army Field Manual 3-97.61-Military Mountaineering is the doctrine for all U.S. military mountaineering.

AFFILIATIONS AND MEMBERSHIPS

Project Management Institute, PMP®

CERTIFICATIONS AND AWARDS

Recipient of Global Engineering and Construction Forum 2016 Award for Excellence.

Recipient of the highly regarded, **MIT, Department of Undergraduate Education, “Infinite Mile” award for “Communication and Collaboration”** in 2009.

U.S. Army recipient of the 1998 USO Metro Washington National Rising Star Award honoring outstanding individuals for their public service presented each year to one person in each branch of military service. Presented by Gen. H. Shelton, Chairman of the Joint Chiefs of Staff.

U.S. Army Alaska 172nd Brigade Non-Commissioned Officer of the Year 2001, selected out of 3,500 soldiers.

The Order of Saint Maurice for service to the United States Infantry.

MILITARY AWARDS

Bronze Star Medal, Meritorious Service Medal (two awards), Army Commendation Medal (seven awards), Army Achievement Medal (eleven awards), Armed Forces Expeditionary Medal (three awards), Global War on Terrorism Service Medal, Humanitarian Service Medal, United Nations Medal (Somalia), NATO Medal, National Defense Service Medal, Southwest Asia Service Medal (three awards), Armed Forces Service Medal, Valorous Unit Award (two awards), Iraqi Campaign Medal, Kuwaiti Liberation Medal (two awards), Combat Infantry Badge with Star (three awards), Expert Infantry Badge, Air Assault Badge, and the Pathfinder Badge.