Tom Kohen

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EDUCATION

Worcester Polytechnic Institute(WPI), Worcester MA

- **Bachelor of Science in Applied Physics**, **Minor in Spanish** GPA 3.76/4.0 Dec 2025
- **Master of Science in Applied Physics** GPA N/A Dec 2026

RELEVANT COURSES

- Intro to Orbital Mechanics, Solar Systems, Atmospheric & Space Environments, Intro to Thermodynamics, Electromagnetic Theory, Statistical Physics, Intermediate Physics Lab

SKILLS

- Digital Tools: MATLAB, Zotero, JMARS, Siemens NX/Autodesk CAD, LabView, Google/Microsoft/Adobe Suite
- Other: Oscilloscope, Laser Alignment, Stylus and Optical Profilometer, Scuba-Certified
- Foreign Languages: Spanish (Fluent), Hebrew (Beginner)

CONFERENCES AND PUBLICATIONS

- **Ti3C2Tx MXene: silk fibroin composite films—engineering DC conductivity and properties in the THz range**
  Springer Nature - Graphene and 2D Materials April 2025
- **Effects of Sodium Polyphosphate on the Electronic Properties of Ti3C2Tx**
  MRS 2024 Fall Meeting - Hynes Convention Center, Boston Dec 2024
- **Sustainable Energy for Smarter Irrigation: Developing a Portable Solar-Powered Irrigation System for Tanzania and the Developing World**
  Digital WPI - Worcester Polytechnic Institute May 2025

EXPERIENCE

2D Materials Photonics Research Lab, WPI, Worcester MA May 2024 - Present

- Collaborated with professors and PhD students, on laboratory analysis of 2D compounds called MXenes using terahertz lasers, voltage probes, and other lab apparatuses, achieving observations of correlation between different intercalated materials and changes in conductivity
- Explored how said compounds degrade over time, how their properties may change with increased exposure, and what materials can be introduced to the MXenes in order to slow or halt degradation, resulting in presentations at the international level of this research
- Investigated how different alignments could affect the shape and polarization of our analysis laser, as well as constructed impromptu containment chambers to drastically boost beam intensity

Interactive Qualifying Project - Sustainable Energy for Smarter Irrigation, Cádiz, Spain Mar - May 2025

- Worked with three other students, as well as professors and students at the University of Cádiz, on designing a portable solar-powered water pump intended for small-scale Tanzanian farmers
- Connected with local farmers utilizing solar power as well as Tanzanian experts in water usage in order to create a well-informed design able to fulfill the water requirements of these farmers
- Researched the human impact of water pumps to better understand the context of our project
- Employed Autodesk to create a three-dimensional design of the pumping system

Team Caverna Chief Scientist - NASA L'SPACE Mission Concept Academy Sept - Dec 2024

- Participated in a NASA workforce preparation academy dedicated to teaching space mission concept formulation for 10 hours a week in a virtual setting
- Led the development of the mission's science goals, and top level success criteria through development of a science traceability matrix and trade studies for payload and site selection
- Utilized tools such as JMARS for planetary surface analysis, Siemens NX for envisioning rover subsystems, and Zotero to organize sources in order to fully plan an exploration of lunar pit caves
- Collaborated closely with the Project Manager and engineering team to ensure team-wide understanding of, and alignment with, science goals for mission success