



Delivering textile driven product innovations for the military and fire service markets.



Leadership Statement

Propel LLC is a product innovation company focused on the design, development, marketing and sales of textile driven technologies. Founded in 2006, we are a woman-owned small business focused primarily on solutions for the military and fire services. We are problem solvers and solution finders. Our experience, coupled with the clarity of vision and passion of commitment of our founder and staff, give us a solid understanding of the science required for game changing innovation as well as the nuances of our markets. We take on the difficult challenges and tasks essential to the success of each and every project, in order to deliver innovation outcomes that meet our customers' needs and exceed their expectations.



Core Competencies

Our research and development is founded on a collaborative and multi-disciplinary approach to problem solving. We have experience in textile engineering, electronic textiles, job specific garment engineering and design, manufacturing, materials science, market innovations, designing and executing test methods and plans. We are highly experienced in transitioning from research and development to both low rate production and full rate production. While our primary focus is protective apparel, Propel has played a significant role in the development and fielding of a wide range of products including:

- Physiological monitoring garments
- Garments incorporating cooling & heating
- Kneepads
- Gloves
- Boots



Bottom photo on page courtesy of Steven Senne – The Associated Press

Cover photos courtesy of the Department of Defence, Petty Officer 1st Class Rafael Martie, Globe Manufacturing, & Cpl. Shane S. Keller

Our Work

Propel's products are indicative of our ability to provide textile technology solutions for difficult challenges across industries. Propel has received US Army R&D contracts to develop textile technology solutions that have transitioned to acquisition including camouflage printed Quiet Loop® integrated into the US Special Forces' Protective Combat Uniform, and fire resistant solutions for US Military snipers. We have received multiple Phase I and Phase II SBIR awards from the US Navy and Defense Health Agency. A new Damage Control Ensemble (the Steam Suit) developed with US Navy Tech Solutions Phase III funding is currently in testing aboard submarines. Propel has received four small business science and technology innovation grants from the State of Rhode Island. Our knowledge and networking skills offer our clients exclusive and unique resources. We are not tied to a single technology or industry - instead we address each specific problem in order to develop the best solution for the user, collaboratively across companies and industries.

Advantages

Propel is uniquely qualified with its highly skilled and experienced team, rapid prototyping capabilities, deep industry knowledge and excellent record of university and commercial collaboration, to solve challenging problems and develop highly innovative solutions for clothing systems, textile-based human to machine interfaces, electronic textiles, personal protection in extreme environments or any other problem where textile innovation is the core of the solution.



Photo courtesy of US Navy by John F. Williams

Expertise

- Materials Research
- Materials Selection
- Materials Development
- 3D Knitted Structures
- Electronic Yarns
- Textile Processing
- Textile Engineering
- Electronic Textiles
- Seam Engineering
- Personal Protection
- Smart Garments
- Fire Resistance
- Camouflage and NIR
- Impact and Ballistic Materials
- Extreme Environmental Conditions
- Chemical Biological Protection
- Rapid Prototyping
- Transition to Manufacturing

Markets/Customers

Propel has a wealth of experience in textile materials and processes and is able to think about a problem and its solution from conceptualization through full scale manufacturing, with attention to both design and business detail. At the heart of this approach is collaboration, and we collaborate with and consult for Peckham Inc., Miltech, Globe Manufacturing, Patagonia Inc., Cascade Designs, Infoscitex, Human Systems Integration Inc., Create Inc., Analog Devices Inc., Aspen Aerogels, SSM Industries, Mustang Survival, Sheep Venture Company, Nautilus Defense, North Carolina State University, Skidmore College, Worcester Polytechnic Institute and the University of Rhode Island.

Products

Ghillie Suit Fire Resistant Yarn Accessory Kit (YAK)

The Ghillie Suit Fire Resistant Yarn Accessory Kit was developed to replace the highly flammable hemp/jute textile used by US Army Snipers to construct their personal camouflage system - known as a Ghillie Suit.

Quiet Loop®

Quiet Loop is integrated into USSOCOM's Protective Combat Uniform System. Quiet Loop has NIR performance and camouflage print definition which, when combined with the audio signal dampening, contributes to enhanced overall signature management. (Quiet Loop is a registered trademark of Propel LLC)

Air Force Cold Weather Aviator System Boots

Designed and engineered in collaboration with Globe Manufacturing and Made in the USA in Auburn, ME, this innovative flight boot ensures safety, comfort and extreme cold weather protection for Air Force aviators.



Ghillie Suit Fire Resistant Yarn Accessory Kit



Quiet Loop®



Air Force Cold Weather Aviator System Boots



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