U.S. DEPARTMENT OF ENERGY

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

ADVANCED MATERIALS & MANUFACTURING TECHNOLOGIES OFFICE

Energy Technology Manufacturing and Workforce

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Acting Program Manager

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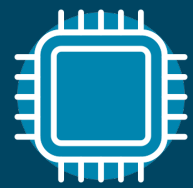
Energy Technology Manufacturing and Workforce

AMMTO Mission: We inspire people and drive innovation to transform materials and manufacturing for America's energy future.

We…

- **Catalyze innovation for resilient, variable, electrified energy**
  - Drive down cost and improve performance of current and emerging power electronics through manufacturing RD&D
  - Accelerate manufacturability of emerging battery technologies
- **Catalyze innovation for impactful energy-efficiency**
  - Reverse global increases in microelectronics energy use through manufacturing RD&D for ultra-efficient microelectronics
- **Inspire and connect people**
  - Increase the reach, relevance, and attraction of manufacturing workforce development programs and careers
  - Inspire diverse entrepreneurs to realize visionary, transformative manufacturing innovations
  - Diversify, amplify and accelerate innovation through innovation ecosystems
  - Partner with federal agencies, industry, National Laboratories for impact



Semiconductors, Electronics, & Other Technology Manufacturing

Energy Conversion and Storage Manufacturing

Entrepreneurial Ecosystems and Advanced Mfg. Workforce

ETMW Program Team - Who

Diana Bauer
Program Manager (Acting)

Tina Kaarsberg
Technology Manager
- Energy-efficient microelectronics
- Power electronics
- SBIR

Changwon Suh
Technology Manager
- Batteries and energy storage

Paul Syers
Technology Manager
- Power Electronics
- LEEP
- Technology Commercialization

Brian Valentine
Technology Manager
- Batteries and energy storage
- Semiconductors
- Workforce development

Jesse Gubert
Technology Manager
- Innovation Ecosystems
- Outreach and Stakeholder Engagement

Nebiat Solomon
Senior Management Analyst
- Workforce Development
- DEIB

Jessica Blackburn
Fellow
- Strategic Communications
- Outreach and Stakeholder Engagement
- DEIB

TBD
Technology Manager
- Workforce development

This could be you!

Semiconductors, Electronics & Other Technology Manufacturing ($15.5M)

Prior Investments

Power Electronics

- R&D projects: Next generation electric machines
- Traineeships

Both

- Have leveraged SBIR, STTR, TCF and other FOAs to explore new areas

2023 Focus

Power Electronics

- Review PowerAmerica for potential renewal
- Launch power electronics for clean energy R&D Roadmap (today!)

High efficiency microelectronics

- EES2 Pledge
- R&D Roadmap
- Seedling lab call on high efficiency devices
- Build collaborative relationships across the interagency to inform broader federal investment

Both

- Leveraging SBIR, STTR, TCF and other programs (e.g. SC) to explore new areas

Look Ahead

Power Electronics

- Complete Roadmap
- Re-establish annual budget
- Scale workforce development programs

Highly efficiency microelectronics

- Complete Roadmap
- Strengthen interagency and industry collaboration for EES2 Roadmap recommendations up the Stack.
- Support additional Analysis and Data collection (e.g with EIA)
- Pursue collaborative lab calls and/or prizes to support EES2 Roadmap and Pledge priorities

Energy Storage and Conversion Manufacturing ($34M)

Prior Investments

RD&D Portfolio

Significant RD&D investments through FOAs and Lab Calls in collaboration with VTO and OE to accelerate manufacturability for

- Lithium-ion batteries
- Flow batteries

Leveraging SBIR, STTR, TCF and other FOAs to fill gaps

2023 Focus

Provide Departmental leadership in manufacturing and supply chains

- Energy Storage Grand Challenge
- Long Duration Storage Earthshot
- Federal Consortium on Advanced Batteries
- Joint Strategy Team

Invest in manufacturing RD&D

- Lithium-ion batteries
  - cathode manufacturing RD&D--FY22 multitopic FOA
  - battery rejuvenation – lab call
- Flow battery manufacturing
  - CRADA Lab call
- Solid state lithium battery manufacturing
  - CRADA Lab call

Look Ahead

Continue departmental leadership

Prioritize storage and conversion technology focus based on gap analysis, risk-reward-opportunity and potential impact

Focus at multiple scales

- Processing, machines, manufacturing systems
- Micro-manufacturing program linkage

Accelerate scale up of high-volume storage/ conversion by

- Focusing on manufacturing platform technologies
- Developing technical standards

Workforce Development and Entrepreneurial Ecosystems ($18M)

Prior Investments

- Battery Workforce Initiative (BWI)
- Lab-Embedded Entrepreneurship Program (LEEP)

2023 Focus

- Convene outreach and workshops with Clean Energy Manufacturing Institutes to envision collaboration and scaling for impact
- Develop roadmap for Institute EWD collaboration and scaling
- Seed investments to supplement and complement existing institute EWD programs, including connections to MSIs
- Broaden departmental support for LEEP through a multi-office advisory council
- Continue support for DOE Battery Workforce Initiative
- Sharpen focus on regional ecosystems that can be engines of manufacturing innovation & workforce development

Look Ahead

- Develop office-level EWD approach that
  - strengthens core knowledge and insight
  - synthesizes and transfers lessons learned across programs.
- Deepen focus on diversity, equity, and inclusion in workforce programming
- Synthesize lessons learned from BWI
- Continue to broaden support for LEEP for high impact

Broader ETMW Future

- The program will develop an approach to scan its domain for additional gaps and opportunities with significant potential impact on the Nation's energy future especially in battery and semiconductor spaces.
- ETMW will consider thought leadership opportunities as well as R&D investment
- For future investments, ETMW will consider gaps in energy technology manufacturing in addition to those in batteries, and semiconductors (power electronics, and microelectronics)
- The entrepreneurial ecosystems and advanced manufacturing workforce subprogram will develop and synthesize core knowledge across AMMTO and DOE more broadly to inform AMMTO's full range of investments

This work could be led by you as Program Manager!

Draft Reviewer Guidance with Context

	Topic	Charge Questions	Office wide	Sub-program	Portfolio/Activity
1	**Structure & approach**	What opportunities do you see for AMMTO to modify our approach in order to maximize our impact?	***Consider these questions from the overarching AMMTO perspective** (e.g., how elements of the AMMTO office complement each other, and how AMMTO engages with intra-agency and inter-agency stakeholders)*	***Consider these questions from the perspective of AMMTO's Programs and sub-programs** (e.g., priorities illustrated by budget allocation that occur on program and sub-program levels, defining the scope and strategy of AMMTO's work and how it will address key challenges)*	***Consider these questions from the perspective of the portfolios and activities within the sub-programs** (e.g., activities and engagement at the execution level, highlighting the strength and applicability of available resources, understanding the breadth of stakeholder teams and how well they are connected, and the technical merit and viability of technical innovation that AMMTO is promoting)*
2	**Priorities & focus**	What opportunities do you see for AMMTO to adjust our priorities and focus (e.g. technical or technology readiness) to have a clear and long-term impact?			
3	**Adaptability**	What opportunities do you see for AMMTO to make changes to better adapt, identify new priorities of investment, and choose where to disinvest over time?			
4	**Leadership**	What opportunities do you see for AMMTO to strengthen our national leadership, and/or choose where and when to be a strong follower?			
5	**Innovation Ecosystems**	What opportunities do you see for AMMTO to amplify our engagement with and influence on the innovation ecosystem that we aim to foster around technologies, challenges and innovation?			
6	**Scientific Focus**	What additional feedback can you share on the scientific quality of AMMTO's initial investments?			
7	**Additional Feedback**	What other suggestions do you have for how AMMTO can "meet the moment" and seize the opportunity before us?			