Project Title	Company Name	PI	Institution	Cycl
Development of a modeling toolbox for CORC® cable performance evaluation	Advanced Conductor Technologies	Danko van der Laan	LBNL	2019
Divertor Component Testing	Commonwealth Fusion Systems	Dan Brunner	ORNL	2019
Superconducting Cable Quench Detection	Commonwealth Fusion Systems	Brandon Sorbom	BNL	2019
Alpha Particle Diagnostics Simulation	Commonwealth Fusion Systems	Steve Scott	PPPL	2019
Divertor Plasma Simulations	Commonwealth Fusion Systems	Dan Brunner	LLNL	2019
Development of a High-Current Solid-State Switch for Magneto-Inertial Fusion	HelicitySpace [RESCINDED]	Setthivoine You	PPPL	2019
Simulation of Plectoneme Formation	HelicitySpace	Setthivoine You	LANL	2019
3D MHD Simulations Support for PJMIF	HyperJet Fusion Corporation	Franklin Witherspoon	LANL	2019
Simulations of Global Stability in the C-2W Device	TAE Technologies, Inc	Sean Dettrick	PPPL	2019
Doppler-Free Saturation Spectroscopy (DFSS) for Magnetic and Electric Field Measurements in an FRC plasma	TAE Technologies, Inc.	Deepak Gupta	ORNL	2019
Developing high harmonic fast wave (HHFW) as an enabling electron heating actuator for an FRC plasma	TAE Technologies, Inc.	Xiaokang Yang	PPPL	2019
Baselining a Tritium Accountancy and Safety Case for a Molten Salt Liquid Immersion Fusion Blanket	Commonwealth Fusion Systems	Brandon Sorbom	INL	2020
Development of phased-array HHFW antenna and load-resilient matching network for the C-2W FRC plasma de	TAE Technologies, Inc.	Xiaokang Yang	ORNL	2020
Low Temperature Testing of New Lower Cost Magnum-NX HTS Cable for Fusion	Solid Material Solutions	Alexander Otto	BNL	2020
Conceptual design of a tritium pellet injector for the ST40 spherical tokamak	Tokamak Energy Inc	David Wilson	ORNL	2020
SPARC 3D Field Physics and Support of the Non-Axisymmetric Coil Assessment	Commonwealth Fusion Systems	Alex Creely	PPPL	2020
Advanced Manufacturing Workflows For Tokamak Internal Components	Commonwealth Fusion Systems	Brandon Sorbom	ORNL	2020
Tungsten Engineered Feed Stock for PFCs	Gamma Alloys, Inc [RESCINDED]	Micah Peabody	ORNL	2020
General Fusion - Advanced Stability Analysis for Magnetized Target Fusion	General Fusion Corp.	Aaron Frose	PPPL	2020
Investigating microstability characteristics of next step tokamaks across a range of aspect ratios	Tokamak Energy, Inc	Steven McNamara	PPPL	2020
Development of an RF Antenna to start-up and sustain a fusion plasma in a spherical tokamak	Tokamak Energy, Inc	Vladimir Shevchenko	ORNL	2020
General Fusion – Ion Temperature Diagnostic Improvement	General Fusion Corp.	Akbar Rohollahi	ORNL	2020
Time-Dependent Boundary Modeling to Inform Design of SPARC Diagnostic and Actuators	Commonwealth Fusion Systems	Alex Creely	ORNL	2020
Magnetic Field Vector Measurements Using Doppler-Free Saturation Spectroscopy	Princeton Fusion Systems, LLC	Charles Swanson	PPPL	2020
Measurement of Magnetic Field using Doppler-Free Saturation Spectroscopy (DFSS) in C-2W FRC plasma	TAE Technologies, Inc.	Deepak Gupta	ORNL	2020
Innovative Joints for High-Temperature Superconducting Tapes	Renaissance Americas, Inc. [VACATED]	Francesco Volpe	BNL	2020
Staged Z-pinch modeling with HYDRA and CHICAGO codes	Magneto Inertial Fusion Technologies, Inc.	Hafaz Raman	LLNL	2020
Feasibility Study of High-Flux FRC Formation via Spheromak Merging for C-2W Experiments	TAE Technologies, Inc.	Hiroshi Gota	PPPL	2020
XGC1 predictions of Scrape of Layer width in present and future high field spherical tokamaks	Tokamak Energy, Inc.	Michele Romanelli	PPPL	2020
Characterization and Qualification of JK2LB Alloy for Additive Manufacturing of Fusion Components	Type One Energy Group, Inc.	Randall Volberg	ORNL	2020
Fabrication and characterization of transition metal hydrides for radiation shielding in tokamak devices	Tokamak Energy, Inc.	Thomas Davis	LANL	2020
Performance Testing of Low-Resistance Demountable HTS Joints for Large Segmented Magnets	General Atomics	Zbigniew Piec	LBNL	2021
Simulation of the Helicity Drive Magneto-Inertial Fusion Concept	HelicitySpace	Setthivoine You	LANL	2021
Improving Plasma Control Capabilities in Magnetically-Confined Tokamak Systems with Transformer Neural Ne	Microsoft Corp.	Alexey Svyatkovskiy	PPPL	2021
Extending Operational Boundaries in the Advanced FRC	TAE Technologies, Inc	Sean Dettrick	PPPL	2021
Phase Diagram of Li-LiH,D,(T) Mixtures and Implications for Tritium Retention and Extraction	Renaissance Americas Inc. [VACATED]	Francesco Volpe	SRNL	2021
Informing Layout and Performance Requirements for SPARC Massive Gas Injection	Commonwealth Fusion Systems	Matthew Reinke	PPPL	2021
Active Redox Control of Molten Salts For Fusion Blankets	Commonwealth Fusion Systems	Brandon Sorbom	SRNL	2021
Neutron Ion Handshake for Fusion Materials	Commonwealth Fusion Systems	Brandon Sorbom	SNL	2021
Magnetic Pumps for Molten Salt Fusion Devices	Commonwealth Fusion Systems	Brandon Sorbom	ORNL	2021
High Heat Flux Exposure of PFC Candidate Fine-Grain Dispersion-Strengthened Tungsten Materials	Energy Driven Technologies, LLC.	Zachariah Koyn	ORNL	2021
Mechanical Characterization of PFC Candidate Fine-Grain Dispersion-Strengthened Tungsten Materials	Energy Driven Technologies, LLC.	Zachariah Koyn	ORNL	2021
In-Field Performance Testing of a Novel HTS CICC for Practical and Cost-Effective Fusion Magnet Systems	General Atomics	Zbigniew Piec	BNL	2021
Thermonuclear fusion verification of Staged Z-pinch fusion on a 0.5 MA LTD pulsed power generator	Magneto-Inertial Fusion Technologies, Inc. (	Emil Ruskov	LLNL	2021
Artificially intelligent optimization of alpha particle transport in stellarators	Renaissance Americas Inc. [VACATED]	Christopher Smiet	PPPL	2021
Extension of MCNP® Mesh Based Weight Windows to Support Unstructured Mesh Topologies	Silver-Fir Software, Inc.	Eugeny Sosnovsky	LANL	2021
Characterization of Turbulent Transport and Confinement in ARC with STEP and CGYRO	Commonwealth Fusion Systems	Alex Creely	University-UCSD	2022
Machine learning assisted prediction of tungsten heavy alloy plasma facing component performance for fusion	Commonwealth Fusion Systems	Dina Yuryev	University-MIT	2022
Assessing ELM mitigation by pellet triggering in SPARC low-collisionality discharges	Commonwealth Fusion Systems	Christopher Chrobak	ORNL	2022
Agile design workflow for plasma-facing fusion components with coupled thermofluidic and structural optimiz	Commonwealth Fusion Systems	Caroline Sorensen	ORNL	2022
Fuel Cycle and Tritium Plant Model for Fusion Pilot Plant	General Atomics	David Weisberg	SRNL	2022
Tritium Fuel Cycle Modelling and Optimization to Enable Fusion Pilot Plant Development	General Fusion Corp.	Ryan Guerrero	SRNL	2022
Beyond Neoclassical Closures for MHD Simulation of General Fusion Devices via Kinetic Monte Carlo Calculatio	General Fusion Corp.	Colin McNally	ORNL	2022
Observing Density Evolution During Merging of Plectonemic Taylor states	Helicity Space Corporation	Setthivoine You	University-Swarthmore	2022
3D modeling of the Staged Z-pinch with the FLASH code	Magneto-Inertial Fusion Technologies, Inc.	Emil Ruskov	University-Rochester	2022
Hard x-ray imaging and characterization of staged z-pinch plasmas in order to exclude ion beams as cause of fu	Magneto-Inertial Fusion Technologies, Inc	Hafiz Rahman	University-CalTech	2022
Electron density profiles on PFRC with USPR	Princeton Fusion Systems, Inc.	Chris Galea	University-UCDavis	2022
Evaluating RF antenna designs for PFRC plasma heating and sustainment	Princeton Fusion Systems, Inc.	Michael Paluszek	PPPL	2022
Stabilizing PFRC plasmas against macroscopic low-frequency modes	Princeton Fusion Systems, Inc.	Stephanie Thomas	PPPL	2022
Performance-structure characterization to improve REBCO Fusion conductor production at SuperPower	SuperPower Inc	Yifei Zhang	University-FSU	2022
Development of a High-Flux Inductive Spheromak Gun for FRC Formation via Counter-Helicity Merging	TAE Technologies, Inc.	Hiroshi Gota	PPPL	2022
THz Radiation Generation to Enable Internal Magnetic Field Measurement of Burning Plasmas	TAE Technologies, Inc.	Ales Necas	University-Rochester	2022
FLARED -- Flowing Lithium's Adsorption and Release Experiment for Deuterium	Tokamak Energy, Inc.	Mark Koepke	University-UIUC	2022
Simulation of Direct-Drive Hybrid Using Two Opposed Beams for Inertial Fusion Energy	VWG Inc. dba Xcimer Energy	Conner Galloway	University-Rochester	2022
A modern neutronics-modeling uncertainty methodology towards a future fusion neutronics handbook	Commonwealth Fusion Systems [VACATED]	Corinne Mitchell	ORNL	2022
Oxide Dispersion Strengthened Ferritic Steel Wire Feedstock Development for Large-Format Additive Manufac	Commonwealth Fusion Systems	Cody Dennett	PNNL	2022
Retention of Fusion Plasma Species in PFC Candidate Fine-Grain Dispersion-Strengthened Tungsten Materials	Energy Driven Technologies LLC	Zachariah Koyn	SNL	2022
Simulation study for risk assessment of laser-plasma instabilities in proton fast ignition	Focused Energy Inc.	Pravesh Patel	LANL	2022
Model validation of low-density foams wetted with liquid deuterium and tritium for inertial fusion target optin	Focused Energy Inc.	Leonard Jarrott	LLNL	2022
Machine learning-accelerated predictions of power and particle exhaust in a fusion pilot plant	General Atomics	Jonathan Yu	LLNL	2022
Determining fast particle behavior in a reactor-relevant Quasi-Axisymmetric stellarator equilibrium	Princeton Stellarators, Inc	Charles Swanson	PPPL	2022
Stellarator evolution modelling	Princeton Stellarators, Inc.	Mike Martin	PPPL	2022
Evaluation of the effect of coolant purity on the corrosion resistance of Castable Nanostructured Alloys for stru	Tokamak Energy Inc.	Naomi Mburu	ORNL	2022
High-temperature superconducting CORC® conductors for stellarator magnet applications	Type One Energy Group Inc.	Paul Harris	LBNL	2022
Development of Tritium Sensors for Enabling Low-Carbon Technologies for FUSION (DETECT – FUSION)	Baker Hughes	Christopher Freeman	University-Penn State	2023
A low AC loss, fast ramp HTS solenoid prototype for compact Spherical Tokamak	Bruker OST	Yibing Huang	PPPL	2023
Electrochemical Evaluation of Hydrogen Concentration and Diffusivity in FLiBe	Commonwealth Fusion Systems	Caroline Sorensen	University-UC Berkeley	2023
Deuterium retention in boron dust	Commonwealth Fusion Systems	Adam Kuang	PPPL	2023
Informing ARC divertor design and plasma facing material selection through integrated modeling	Commonwealth Fusion Systems	Lauren Garrison	University-UCLA	2023
Design of proton diagnostics operating at high repetition rate to advance proton fast ignition	Focused Energy Inc.	Andrea Hannasch	PPPL	2023
Opportunities for Fusion Coil System in a Compact Spherical Tokamak using Low Cost, High Field Superconduct	Gauss Fusion Inc.	Lawrence Masur	PPPL	2023
Design and simulation of innovative p-11B targets for IFE	HB11 Energy USA LLC	Thomas Mehlhorn	University-Rochester	2023
Nonlinear kinetic simulation study of non-equilibrium and merging FRCs	Helion Energy	Anthony Pancotti	PPPL	2023
A Multiphysics Simulation of Magnetohydrodynamic Li-Pb Flow in a Blanket Module with SiCf/SiC as Structural	Kyoto Fusioneering America Ltd.	Bibake Uppal	PPPL	2023
Evaluating Lithium-Lead Mixtures for Increased Tritium Breeding in Fusion Energy Blanket Systems: Exploring t	Kyoto Fusioneering America Ltd.	Chris Dorn	ORNL	2023
Evaluating Lithium Compatibility for Electrode Materials Used in an Electrolysis-Based Tritium Extraction Proce	Kyoto Fusioneering America Ltd.	Chris Dorn	SRNL	2023
Developing a renewable first wall with boron pebbles.	Princeton Stellarators, Inc.	Santhosh Kumar	University-UCSD	2023
ORNL Portable Diagnostic Package for Evaluating Mirror Performance	Realta Fusion	Kieran Furlong	ORNL	2023
Efficient Tritium Extraction from Liquid Lithium	Stellarex, Inc.	Michael Zarnstorff	SRNL	2023
Integrated kinetic modeling of a biased expander using Aleph code	TAE Technologies	Ales Necas	SNL	2023
In-situ measurements of hydrogen-titanium plasma-material interactions for model validation	TAE Technologies	Jon Drobny	University-UIUC	2023
Post irradiation examination of nickel doped fusion steels irradiated in the High Flux Isotope Reactor (HFIR)	Tokamak Energy Inc	Mark Koepke	ORNL	2023
High Energy Pulsed Laser Amplification Using Optical Enhancement Cavities	Blue Laser Fusion	Trevor Cohen	University-CalTech	2024

SOLPS-derived separatrix operating space scalings for informing SPARC integrated power exhaust scenarios	Commonwealth Fusion Systems	Thomas Eich	ORNL	2024
In situ Elemental Analysis of Fluoride Molten Salt Using Laser Induced Breakdown Spectroscopy (LIBS)	Commonwealth Fusion Systems	Alexi Khechfe	ORNL	2024
Building a Tritium Facility Operating Experience Body of Knowledge to Support Commercial Fusion Power Plant	Electric Power Research Institute, Inc.	Andrew Sowder	SRNL	2024
Testing Novel Liquid Metal PFC compositions	ExoFusion	Michael Kotschenreuth	University-Penn State	2024
Tritium Handling System Assessment for Proton Fast Ignition	Focused Energy, Inc	Jim Gaffney	SRNL	2024
Mitigation of Cross Beam Energy Transfer and Hot Electrons by Laser Spectral Bandwidth	Focused Energy, Inc.	Linh Nguyen	University-Rochester	2024
Developing Matter Injection Technologies for Fusion Power Applications	General Atomics	Nicholas Eidietis	ORNL	2024
Metal “Film” Pump for Direct Internal Recycling of Fusion Fuel	General Atomics	Carlos Monton	INL	2024
Preparation & Characterization of Li-6-enriched Lithium-Lead Samples for Neutron Irradiation	Kyoto Fusioneering America Ltd.	Chris Dorn	INL	2024
Testing of Engineered Membranes in Fusion-Relevant Metal Foil Pumps	Marathon Fusion	Adam Rutkowski	rsity-Colorado School of I	2024
Are Magnetohydrodynamic Forces Low Enough to Enable Single Coolant Lead Lithium Blankets in Tandem Mirr	Realta Fusion Inc.	Craig Jacobson	ORNL	2024
Efficient Neutral Beam Injection for Mirror Fusion Reactors	Realta Fusion Inc.	Craig Jacobson	LBNL	2024
Validation of Kinetic Models of FRC Stability against C-2W Experiment	TAE Technologies, Inc	Sean Dettrick	PPPL	2024
Development of advanced, oxidation-resistant vanadium alloys for fusion blanket applications	Tokamak Energy, Inc.	Aaron Washington	ORNL	2024
High Temperature Superconducting Cable Testing and Optimization for Stellarator Fusion Applications	Type One Energy Group	Zachary Johnson	University-FSU	2024
Tritium extraction from flibe blankets using the CoREXt process	Xcimer Energy Corporation	Susana Reyes	SRNL	2024
Interference coatings for Blue Laser Fusion high enhancement cavity	Blue Laser Fusion	Dr. Morgan Pattison	University - CSU	2025
Mechanical Characterization of Neutron Irradiated Tungsten	Commonwealth Fusion Systems	Dr. Lauren Garrison	ORNL	2025
Evaluating the impact of lead-lithium purity on tritium transport	EX-Fusion America Inc.	Mr. Max Monange	INL	2025
Design of charged-particle diagnostics operating at moderate repetition rates to advance direct-drive laser fusi	Focused Energy Inc	Dr. Xavier Vaisseau	University - MIT	2025
Measuring Electron Temperature in the ECLAIR Experiment	Helicity Space Corporation	Dr. Setthivoine You	University - CalTech	2025
Study of field reversed configuration stability during super-Alfvénic acceleration and translation via hybrid kine	Helion Energy, Inc.	Dr. Stephen Clark	PPPL	2025
Characterization and Tritium Breeding Ratio Measurement of Li-6-enriched Lithium Samples After Thermal Neu	Kyoto Fusioneering America Ltd.	Ms. Carli Smith	INL	2025
Nonlinear Effects in High-Intensity Laser Focusing in a Simulated Fusion Reactor Environment	Marvel Fusion Inc.	Alexander Meadows	University-CSU	2025
Development of Fusion-Grade Lithium Material Specifications	Molten Salt Solutions	Dr. John Elling	LANL	2025
Coded Apertures for Pulsed Magnetic Fusion Neutron Imaging	Pacific Fusion Corporation	Dr. Samuel Langendorf	LLNL	2025
Leveraging ORNL Advanced Spectroscopy for Fast-Ion Confinement Studies on WHAM	Realta Fusion	Dr. Douglass Endrizzi	ORNL	2025
High magnetic field transport testing and microstructure characterization for development of high performanc	Superpower Inc.	Dr. Iole Falorio	University - FSU	2025
Darwin EM PIC model for kinetic edge plasma with electrode-biased divertor in WarpX	TAE Technologies, Inc.	Dr. Roelof Groenewald	LBNL	2025
ML/AI for fast robust EP loss estimates	Thea Energy, Inc.	Dr. Erik Flom	PPPL	2025
Analysis of energetic-particle-driven Alfven activity in the Eos stellarator towards a quasi-axisymmetric fusion p	Thea Energy, Inc.	Dr. Charles Swanson	University - Columbia	2025
Development of High Temperature Superconducting (HTS) Magnet Performance Prediction Workflows from a I	Thea Energy, Inc.	Mr. Daniel Nash	PPPL	2025
ELITE-HEO (Electrolysis of LIthium for Tritium Extraction using High Entropy Oxides)	Tokamak Energy, Inc.	Dr. Aaron Washington	SRNL	2025
Integrated Visible Divertor and Edge Spectroscopy Solution for Infinity One	Type One Energy Group, Inc.	Dr. Priyanjana Sinha	University - Wisconsin	2025
Experimental assessment of cold spray technology for corrosion protection of components facing liquid Pb-Li a	Westinghouse Electric Company LLC	Dr. Arash Parsi	University-Virginia Tech	2025
Simulating thermal and momentum impact of inertial fusion neutrons on chamber jet dynamics	Xcimer Energy Corporation	Dr. Kirk Flippo	ORNL	2025