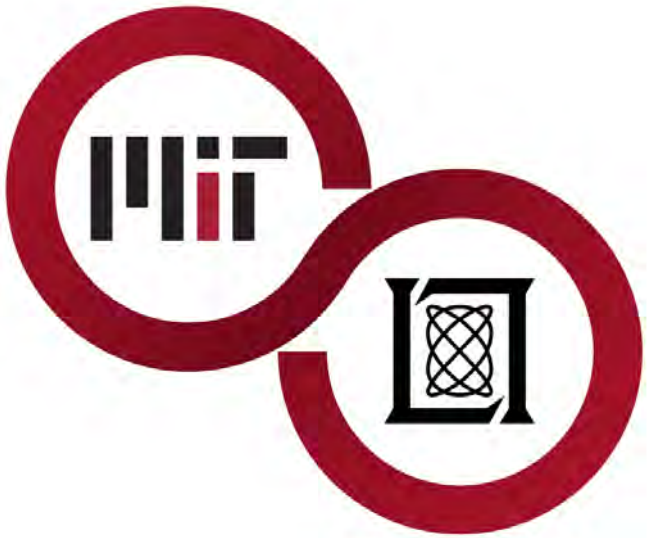
MIT Lincoln Laboratory and MIT Campus

April 2, 2019



Agenda

10:30 **Welcome and Introductions**

Carol Wood, Director, Research Administration Support, Office of the Vice President for Research

Claude Canizares, former Vice President for Research at MIT and Bruno Rossi Professor of Physics, Session Moderator

10:35 **MIT Lincoln Lab Overview**

Scott Anderson, Assistant Director for Operations, MIT Lincoln Laboratory

MIT Lincoln Lab and MIT Campus Interactions

Robert Bond, Chief Technology Officer, MIT Lincoln Laboratory

11:15 **Panel Discussion – MIT Lincoln Lab and MIT Campus operations**

Scott Anderson, Assistant Director for Operations, MIT Lincoln Laboratory

Mike Corcoran, Assistant Director, Grant and Contracts Administration, Office of Sponsored Programs

Kara DeNutte, Senior Fiscal Officer, Kavli Institute for Astrophysics & Space Research

Questions & Answers

12:00 **Close**

MIT Lincoln Laboratory Overview

Scott Anderson, Assistant Director for Operations

Presentation to MIT Research Administration

2 April 2019

LINCOLN LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

This work is sponsored by the Department of the Air Force under contract FA8721-05--C-0002 and FA8702-15-D-0001 Opinions, interpretations, conclusions, and recommendations are those of the author and are not necessarily endorsed by the United States Government.

MIT Lincoln Laboratory
The Beginning

World War II Support

MIT Radiation Laboratory

- Sep. 1940 – "Tizard Mission"
- Oct. 1940 – Dec. 1945 – MIT "Rad Lab"
- Designed half (> 100) of the radars used in WWII
- 4000 employees

Support Following World War II

MIT Lincoln Laboratory

- Lincoln Laboratory was established by MIT in 1951 at the request of the Air Force
- Public Service – "no loss no gain"
- SAGE system developed - 7 years
- MITRE spun-off in 1958

Agreement between MIT and the Department of Defense (DoD)

1951 to Present: MIT Service to the country through a commitment to operate a Federally Funded Research and Development Center (FFRDC) for the DoD on a "no loss, no gain" basis.

MIT Lincoln Laboratory
DoD Research and Development FFRDC

Massachusetts Institute of Technology

MIT Lincoln Laboratory, Lexington, Massachusetts

Mission: Advance Technology in Support of National Security

Key Roles: System prototyping and demonstration
Long-term technology development
System architecture engineering

Mission Areas:

- Air, Missile, and Maritime Defense Technology
- Homeland Protection
- Air Traffic Control
- Communication Systems
- Cyber Security and Information Science
- Advanced Technology
- Space Systems and Technology
- ISR Systems and Technology
- Tactical Systems
- Prototype Engineering

FY18 Funding: $1,027M

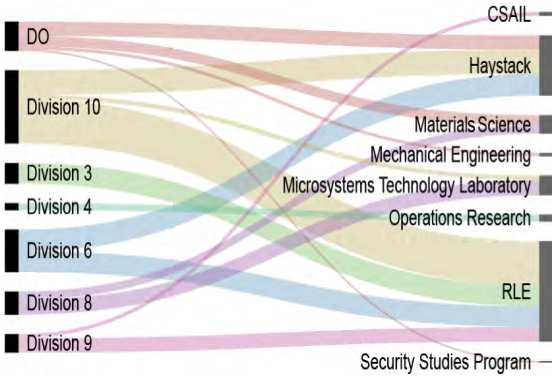
Projects: ~700

Headcount: 3884

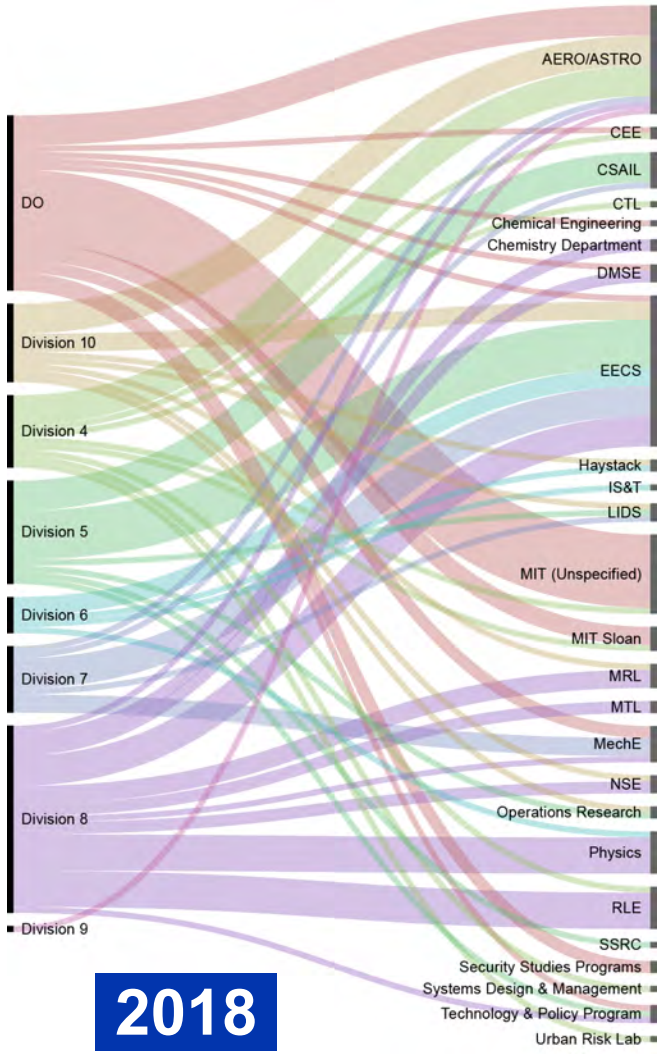
Lincoln Laboratory-Funded Collaborations with MIT

2005 and 2018 Compared

- **Steady growth in collaborations between MIT and MIT LL**



2005



2018

MIT Campus and MIT LL Shared Values and Distinctions

Technical Excellence **Integrity** **Meritocracy**

Campus

Education and Basic Research
- Science and Engineering

Open Environment
- Public Domain
- International

Outside Activities Necessary for Faculty

Lincoln Laboratory

Applied Research and Development

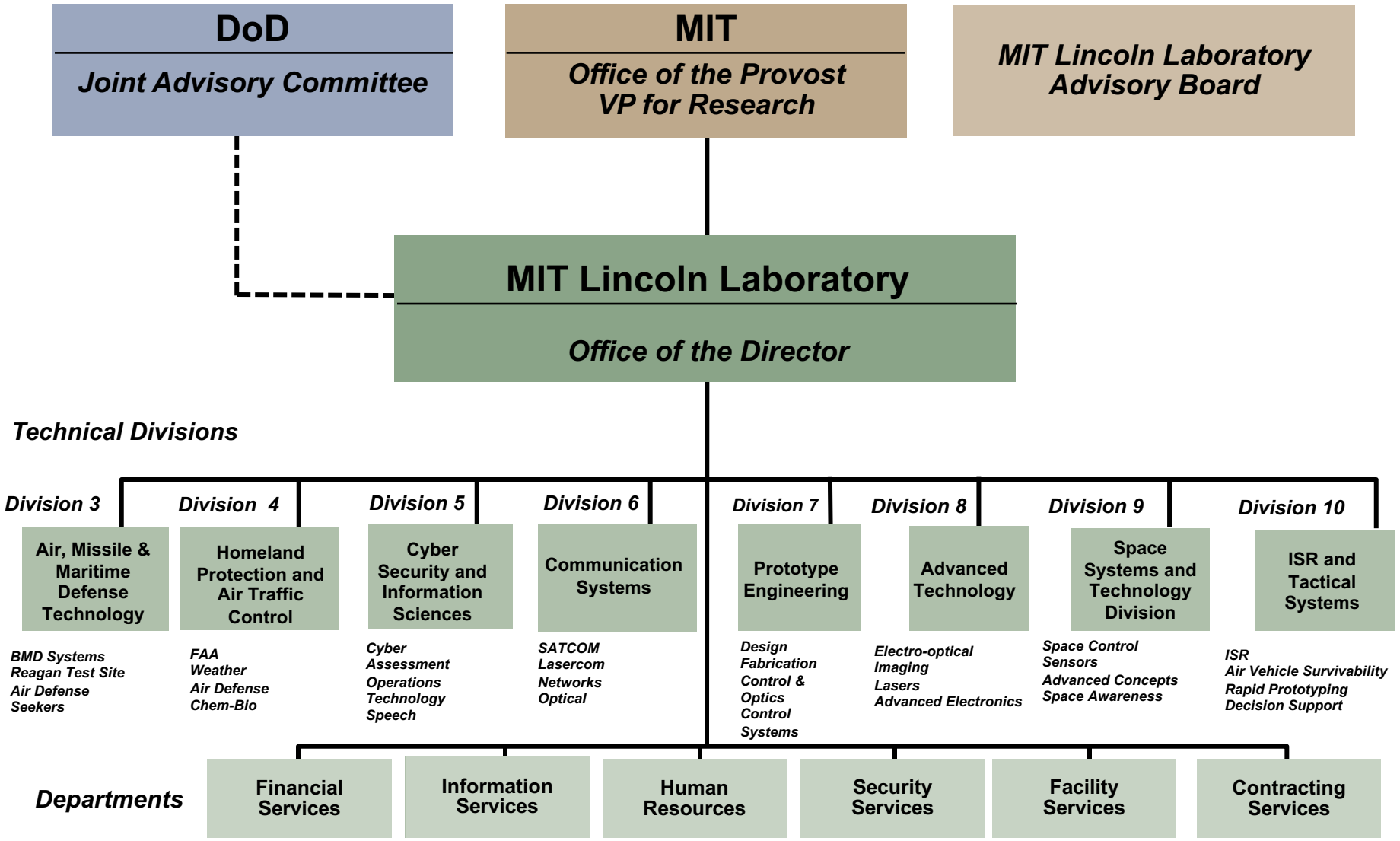
Restricted Environment
- National Security information
- Hanscom AFB

Strict Conflict-of-Interest Policy including Outside Activities

Advance global knowledge through education

Advance technology in support of National Security

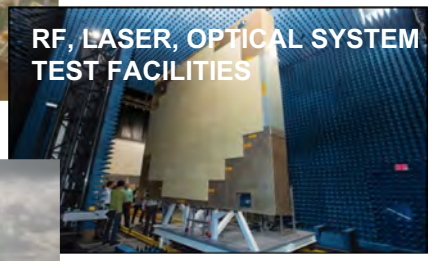
MIT Lincoln Laboratory
Organization



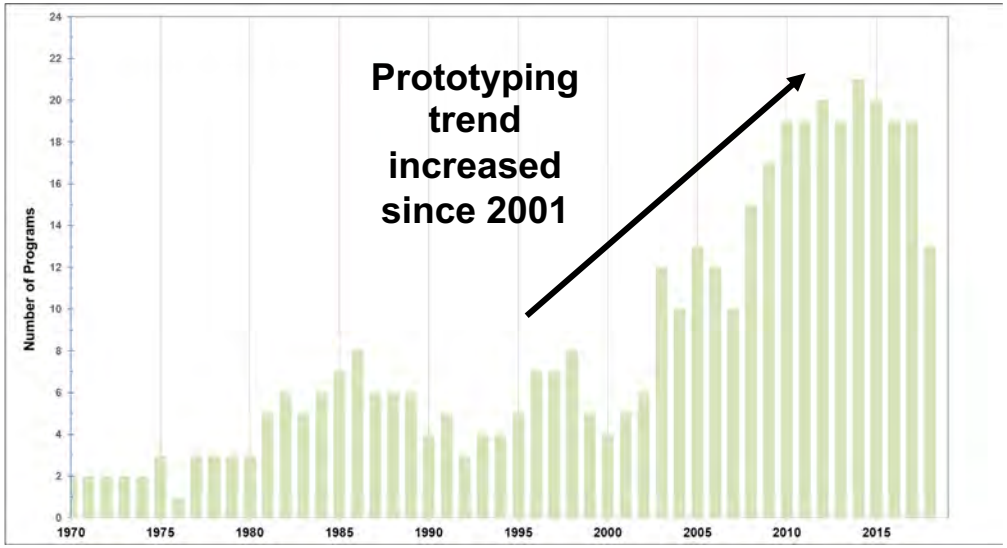
MIT Lincoln Laboratory Complex

- "Vertically integrated" facility for rapid "end-to-end" prototyping
- The Govt. facilities are dated, many without upgrades since1950s
- 30 year phased Facility Modernization Plan being started to address deteriorated condition

Algorithms
Components
Systems
Platforms



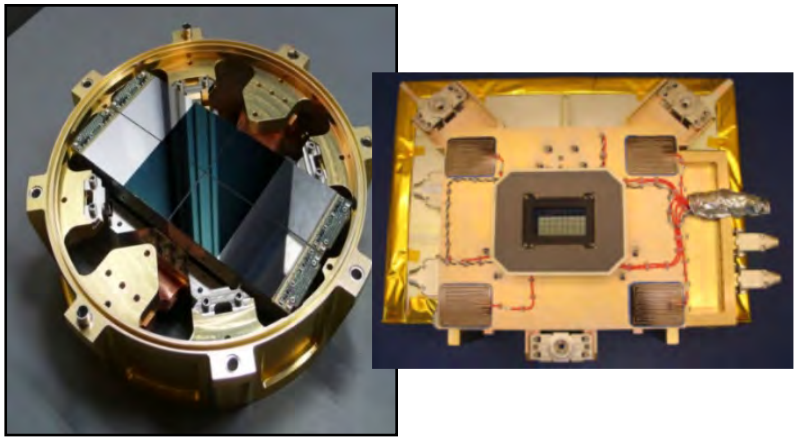
Prototyping and Technology Transfer



Multifunction Phased Array Radar Prototype
FAA/NOAA - July 2018

Prototyping now represents 62% of the Laboratory Work Program

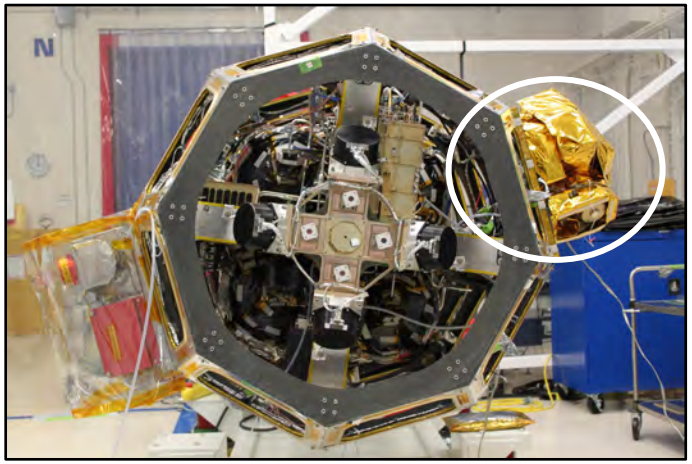
- Technical risk reduction
- Rapid acquisition
- Unlimited Govt. Data Rights



NASA Transiting Exoplanet Satellite System
NASA Launch: Mar 2018

NASA Lunar Laser Communication Demonstration (LLCD)

LLCD on NASA Lunar Atmosphere and Dust Environment Explorer (LADEE)



- **Demonstrated high-rate optical communications from lunar orbit (385,000 km)**
  - **622 Mbps downlink**
  - **20 Mbps uplink**
- **Lincoln roles**
  - **Lasercom architecture and system engineering**
  - **Built space/ground terminal**
  - **Developed superconducting nanowire detectors for ground terminal**
  - **Build lasercom operations center**
  - **Perform experiments**

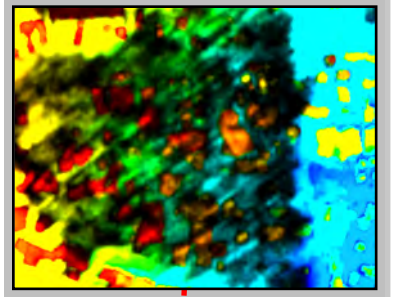
ALIRT System

Laser Radar (LADAR)

- Scanning LADAR system developed and integrated a on a Gulfstream-III
- Mapped 70% of Afghanistan

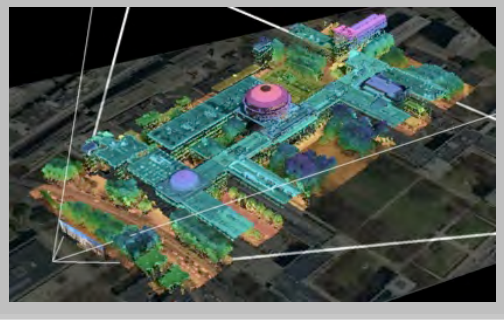
Helicopter Landing Zones

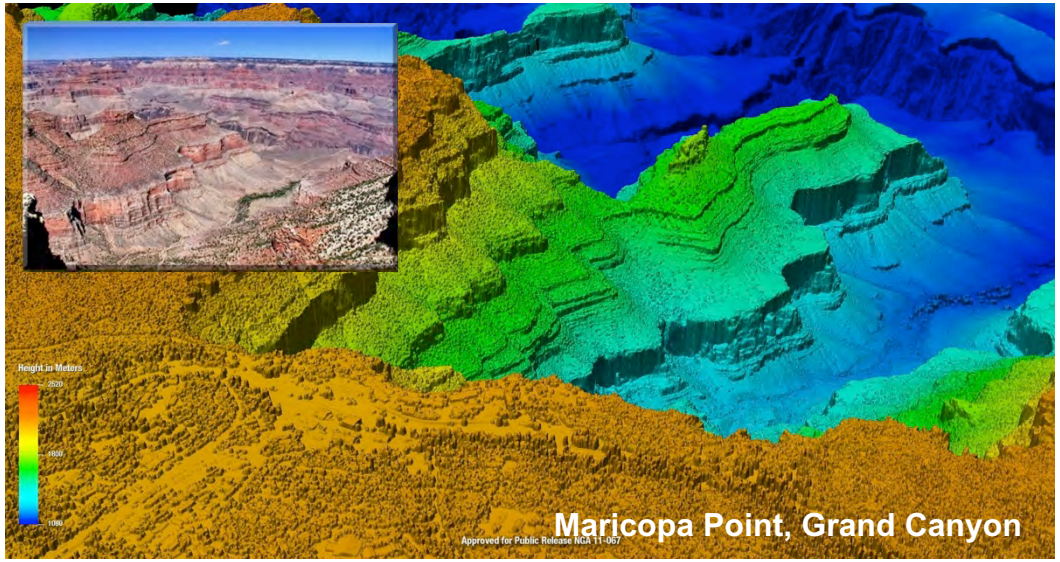
Imagery Under Trees



Tents under trees in Haiti

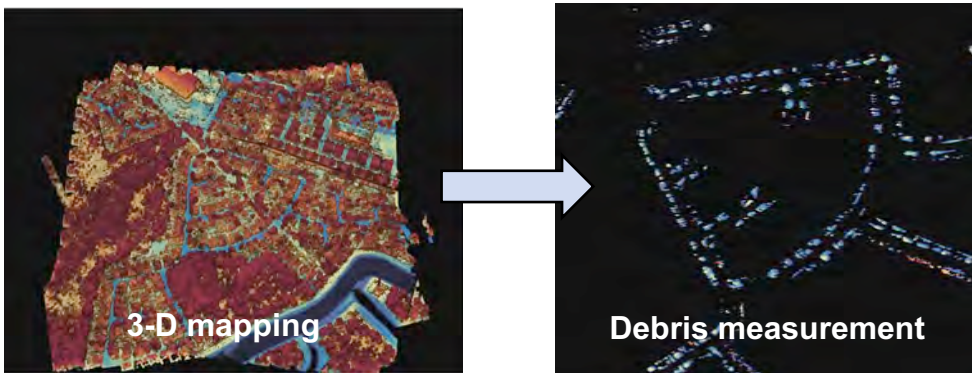
High-Accuracy Location Context for Imagery



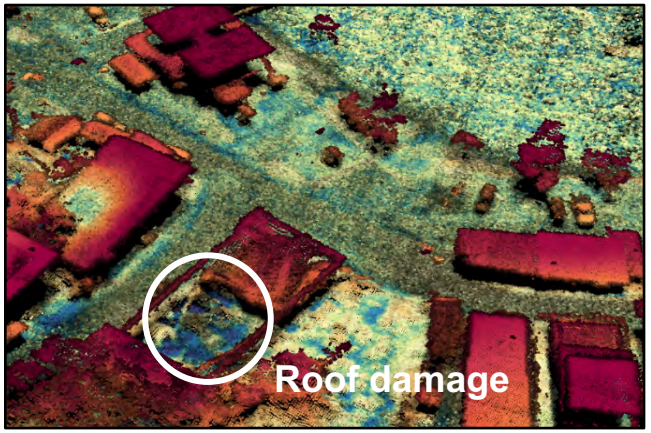


LADAR for Humanitarian Assistance and Disaster Relief for FEMA

Post-Harvey Houston Debris Quantification



Post-Maria Puerto Rico Baseline Measurement



Successful Proof of Concept for FEMA

AUV Power Subsystem (2.013/2.014)

Project Description : ***Design, build and demo an air-independent power system for an Autonomous Undersea Vehicle (AUV) to operate over extended periods of time***

$$2Al + 6H_2O \rightarrow 3H_2 + 2Al(OH)_3 + Q$$

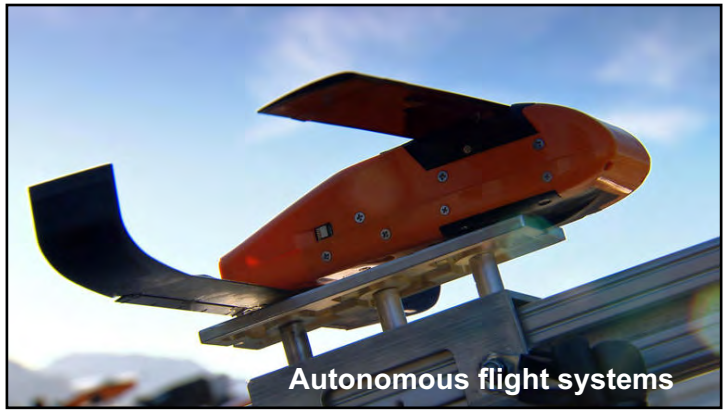
Fuel	Energy Density (MJ/L)	
	In air	In water
Li-ion	0.6	0.6
Diesel	38.5	0
Aluminum	86	42.9
Gasoline	34.5	0

Concept: Use H_2 from Al-water reaction and O_2 from disassociation of Sodium Chlorate to drive fuel cell that recharges batteries

MIT Mechanical Engineering Department, Professor Doug Hart

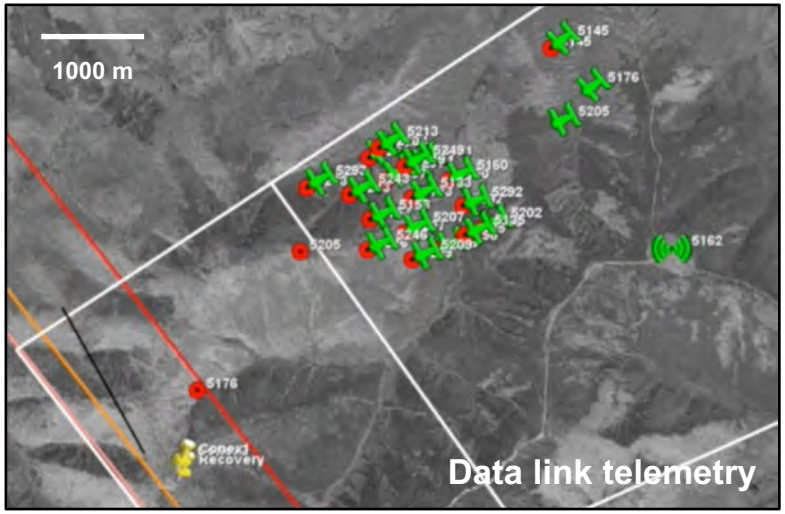
- Two semester design/build course sequence, ~35 students + 1 graduate RA
- Funding from ONR and Lincoln Laboratory: $200K

“Perdix” Micro UAV



Key Parameters

- Deploy at 30,000 ft
- Fit into standard flare canister
- ~30 min powered flight
- Carry open architecture payloads



Development and Flight Test

- Initial air vehicle design by MIT student Capstone project
- Demonstrated rapid prototyping techniques
- Autonomous mission completion
- 100+ vehicle swarm demonstration

CBS News 60 Minutes, “The Coming Swarm”

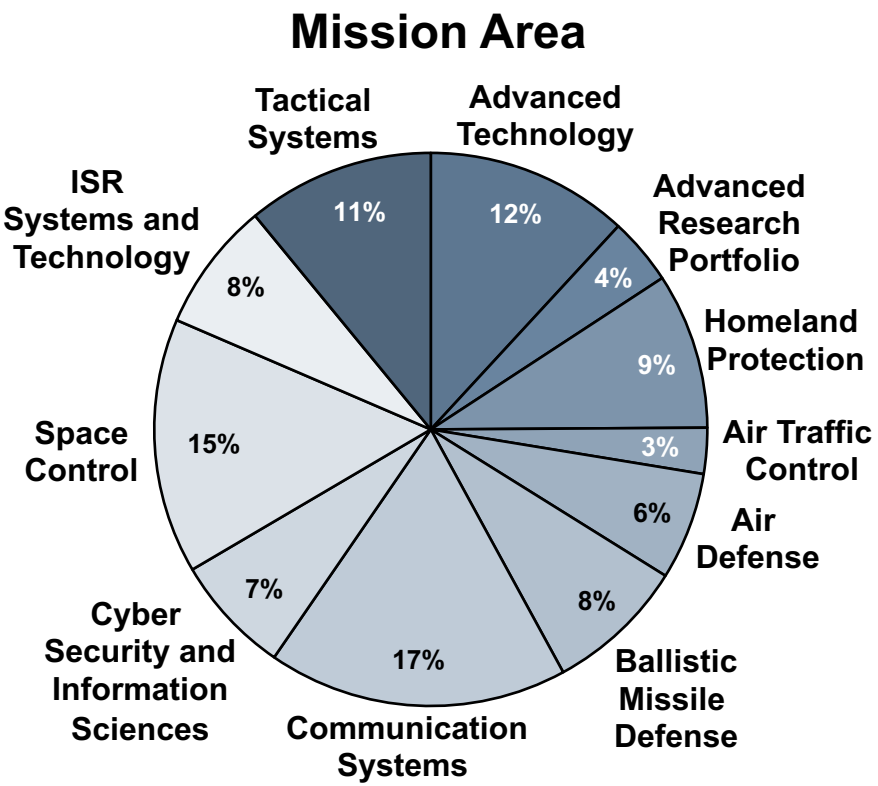
Ground Control Station View of GradEx

MIT LL Prime Contract

Air Force IDIQ Prime Contract

- 98% of Laboratory work
  - 87% DoD
  - 13% non-DoD
- 10 year Period of Performance
  - Through 31 Mar 2025
- All research projects are cost reimbursement / no fee
  - Approved by Air Force
- Defines Govt. review and approval process
  - Individual project and overall work program levels

FY18 Funding Breakout



$1,027M Total

Takeaways

- **Lincoln Laboratory…**
  - **Is a DoD R&D Federally Funded Research and Development Center (FFRDC)**
  - **Is part of MIT but there some important differences**
  - **Is managed by MIT on a "no loss, no gain" basis**
  - **Mission is to advance technology for national security**
  - **Builds prototypes**
- **There are numerous opportunities to collaborate and interact with Campus**

MIT Campus – MIT Lincoln Laboratory Interactions

TOPICS IN RESEARCH ADMINISTRATION

Robert Bond, Chief Technology Officer

2 April 2019

LINCOLN LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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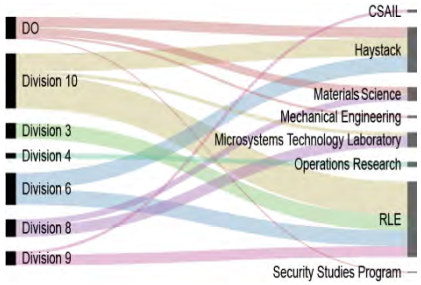
Lincoln Laboratory-Funded Collaborations with MIT Campus

2005 and 2018 Compared

- **Steady growth in collaborations between MIT Campus and MIT LL**



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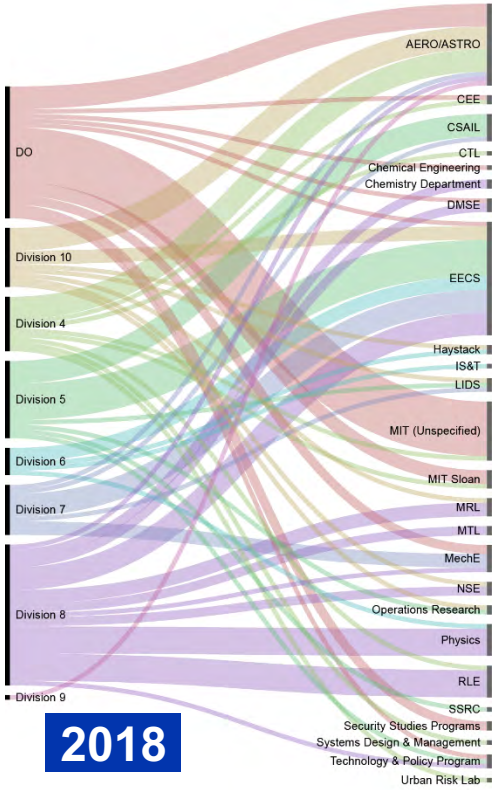


2018

Avenues of Interaction

- **Technology Office Opportunities**
  - **Advanced Concepts**
  - **“Line-funded” R&D**
- **Other Venues**

Technology Office Research and Development Categories

	Technology Office Seedlings	Advanced Concepts Committee	Line + Associated Allocated	New Technology Initiatives	Innovation Initiatives
Goal	New concept	Basic Research (6.1)	Applied research (6.2)	Advanced technology development (6.3)	Foster innovation
Approach	Small-scale studies and feasibility demonstrations	Proof-of-concept experimentation	Strategically driven S&T projects	Concept and systems demonstrations	Challenges, Lending Library, Innovation Laboratory, Seminars
Apply	Any time	Monthly	Annually-Spring	3X/year	As announced
Typical Duration	3-12 months	6 – 12 months	2-4 years	1-1.5 years	As announced
Typical Funding Level	$50K - $100K	$80-$150K	$200K - $2M/yr	$200K - $500K	$50K - $250K
FY19 Total Funding	**$0.8M**	**$1.8M**	**$51.5M**	**$1.9M***	**$0.5M**

= $56.5M

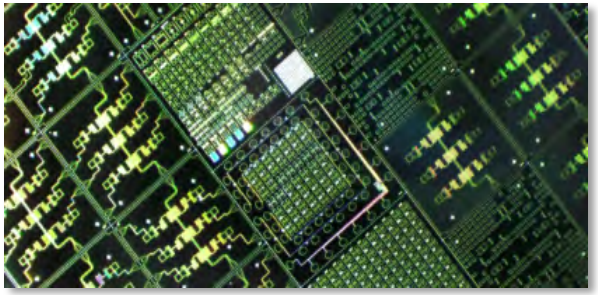
* 1.5M (TO) + 0.42M (TVO)

Advanced Concept Committee (ACC)

Summary

- Funds basic innovative research efforts that address technical problems in support of national security
- MIT Campus PoC: Prof. Jonathan Howe

FY17 Example: Superconducting Amplifier Arrays

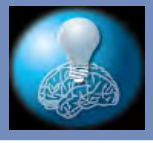


- Low temperature superconducting bolometric detector arrays for coherent neutrino detection
- Applications include nuclear nonproliferation, X-ray astronomy, and science

FY18 Projects

Joint MIT LL / MIT or MIT Only	Thin Film On-Chip Microbatteries
	Tunneling Based Post-CMOS Logic Devices
	Super Coatings for Precision Sensing
	Germanium Waveguides for MIR Apps
	Electrically-driven Fuel Conversion
	Unsupervised Audio-Visual Leaning
	Real-Time Learn for Time-Vary Models
MIT LL Only	Nonparametric Bayesian Clustering
	3D Printing of Submicron Structures
	Chip-level Integration for Silicon Diode
	LION Optical Modulator
	Health Monitoring for the Human Gut
	Detection & Characterization Molecule

Internal Research and Development Categories

	Technology Office Seedlings	Advanced Concepts Committee	Line + Associated Allocated	New Technology Initiatives	Innovation Initiatives
					
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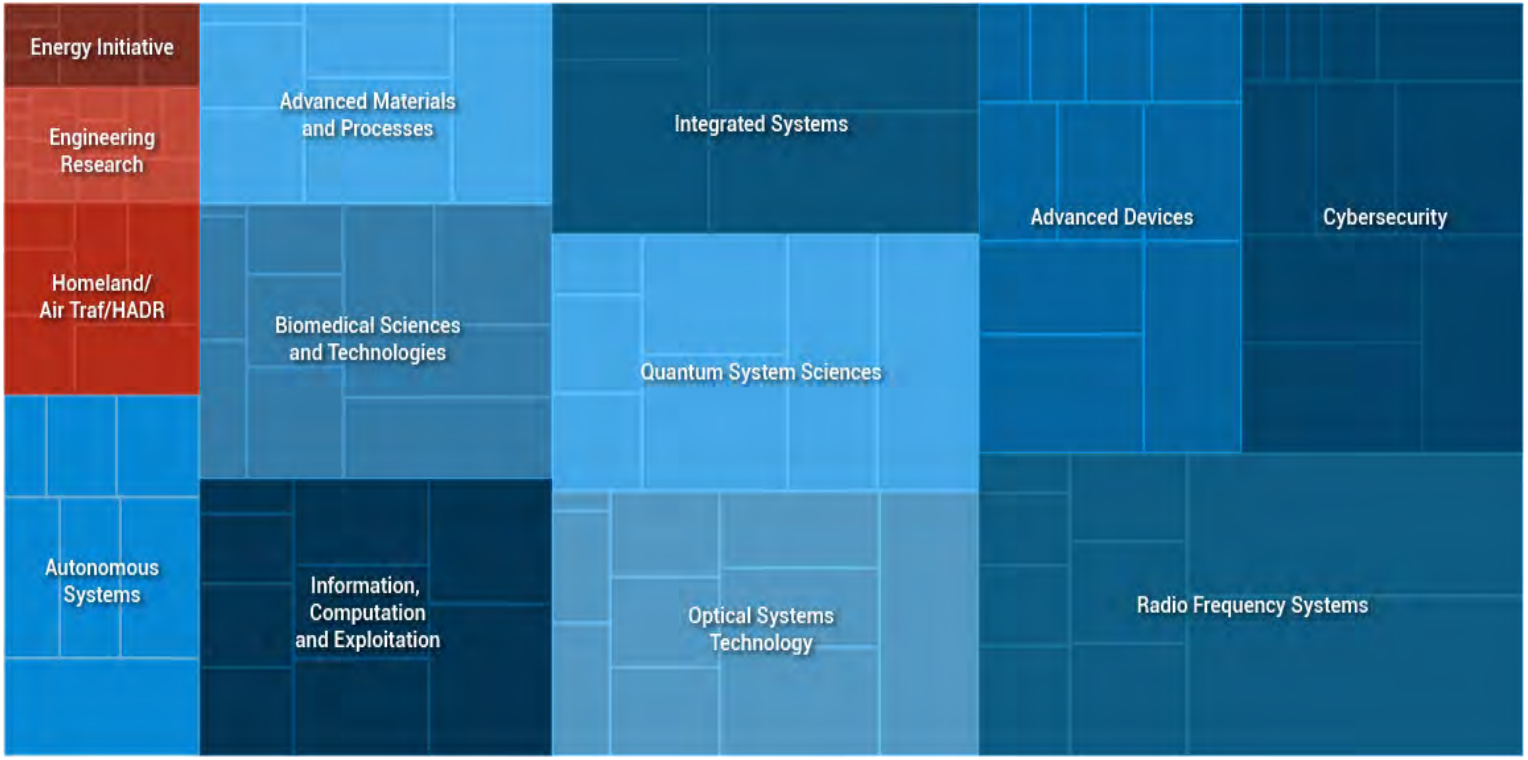
FY19 Line and Associated Allocated Portfolio

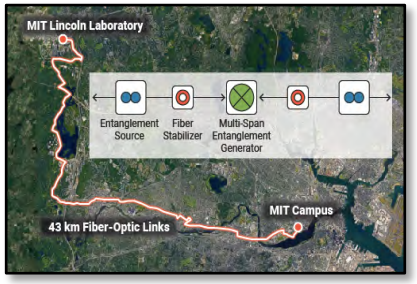
Primarily Internal
Primarily USD(R&E) Line

Size of rectangle proportional to funding; smaller blocks denote projects within categories

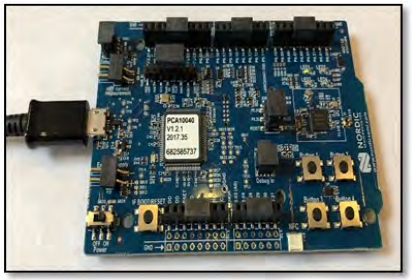


Line Project Collaborations

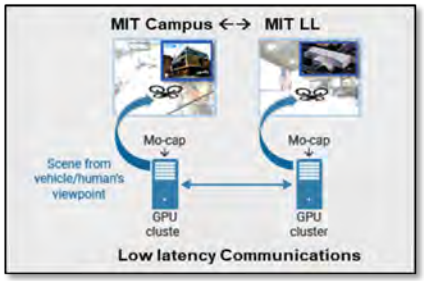
Example Projects



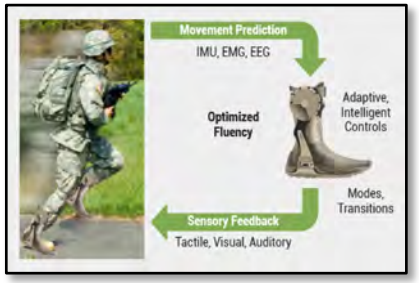
Quantum Network Testbed
- Prof. Isaac Chuang (Physics)
- Prof. Dirk Englund (EECS)



Resilient Mission Computer
- Dr. Howard Shrobe (CSAIL)*



Virtual-Physical Environment for Autonomy Research
- Prof. Sertac Karaman (AeroAstro)



Neural Control of Exoskeletons
- Prof. Leia Stirling (Aero Astro)

Summary

- **MIT Campus researchers must team with MIT Lincoln Lab researchers to be eligible for these projects**
- **Call for Proposals: 21 March 2019**
- **Proposals Due: 30 April 2109**
- **Contact: Robert Bond rbond@ll.mit.edu**

*CSAIL Consultants Prof. Frans Kaashoek, Prof. Nickolai Zeldovich, Prof. Adam Chlipala, Prof. Srini Devadas

Other Significant Interactions

- Center for Quantum Engineering
  - Jointly operated by MIT LL and MIT EECS/RLE
  - Director: Dr. William D. Oliver
- Beaver Works Facilities: Joint MIT campus and MIT LL spaces at Tech Square and Bldg. 31
  - Director: Dr. Robert Shin
- Super-Computing: Lincoln Laboratory Super Computer and MGHPCC
  - Leadership: Dr. Jeremy Kepner and Dr. Albert Reuther
- Advanced Functional Fabrics of America (Prof. Yoel Fink, CEO) & Defense Fabric Discovery Center
- Capstone Projects: Practical MIT course projects funded by govt. or industry sponsor
- Teaching assignments: Lincoln staff can be lead instructor or teaching assistant
- Participation on boards, reviews, special studies, etc…
- Campus and Lincoln joint appointments
- Student interactions
- Lincoln Laboratory Orientation for new MIT professors: held semi-annually at Lincoln

Some Examples of MIT Campus and MIT Lincoln Laboratory Collaborations

Future Lincoln Laboratory AI Supercomputing Center

- Supporting numerous data supercomputing collaborations between MIT/Campus and MIT-LL
- Classified and closed variants operated at MIT- LL, open variant available to campus
- Future capability tailored for artificial intelligence applications
- Supports education outreach in supercomputing and AI

PoC: Jeremy Kepner

Center for Quantum Engineering (CQE)

- Operated jointly by MIT Research Laboratory of Electronics (RLE) and MIT-LL
- Supports the development of quantum sensing, communications, computing, and other technologies
- Takes advantage of cutting edge fabrication facilities at both locations

PoC: William Oliver

MIT Beaver Works Lincoln Laboratory & School of Engineering

- Lincoln Beaver Works capstone projects; for example
  - Mobile tactical power systems
  - KitCube Design for NASA CubeQuest
- Lincoln – campus joint research projects; for example
  - High-speed micro-air-vehicle (MAV)
  - Perdix deployable MAV

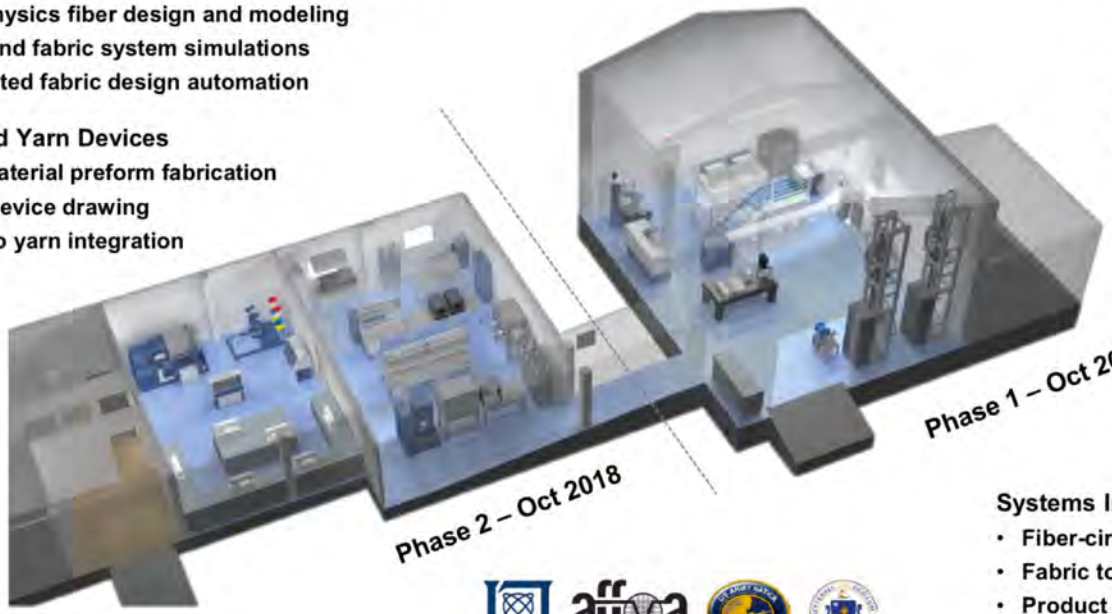
PoC: Robert Shin

Defense Fabric Discovery Center

Secure facility to enable fabrication of advanced functional fabrics and defense system prototypes

Computer-Aided Design of Integrated Textiles
- Multiphysics fiber design and modeling
- Fiber and fabric system simulations
- Integrated fabric design automation

Fiber and Yarn Devices
- Multimaterial preform fabrication
- Fiber device drawing
- Fiber to yarn integration



Textile Systems and Assemblies
- Programmable knitting and weaving
- Composites fabrication
- Textile testing and evaluation

Systems Integration
- Fiber-circuit interconnections & packaging
- Fabric to cloud connectivity
- Product demonstrations

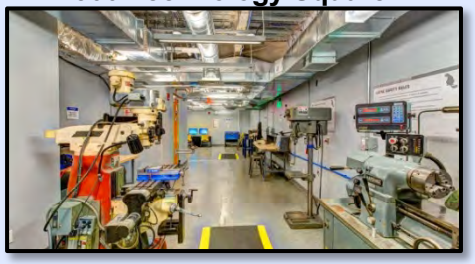
Summary

- MIT Lincoln Laboratory interacts with MIT Campus through numerous avenues
  - MIT continues to pursue strategies to increase interactions
    - Project funding from Lincoln Lab to MIT campus more than doubled from 2005 to 2018
- Technology Office Line and ACC are major sources of collaborative projects
- Many other avenues of interaction exists, many of which of recent initiatives, for example:
  - Beaver Works
  - Center for Quantum Engineering
  - Lincoln Lab Supercomputing Centebr
  - Defense Fabric Discovery Center
  - Etc…

MIT Lincoln Laboratory Beaver Works

300 Technology Square + MIT Building 31, Cambridge, MA

300 Technology Square



MIT Building 31

Prototyping lab, classrooms, and research area (~9,000 sqft)

Lincoln Beaver Works Activities

- **Lincoln Beaver Works capstone projects (Lincoln funding and/or mentors)**
  - Persistent USV for ionosphere measurement (2.013/2.014)
  - Carbon neutral cooling (2.013/2.014)
  - SVTOL aircraft design (16.82)
- **Lincoln funded research projects / research assistants**
  - Two UAV-related research projects
  - Cyber research focusing on software analysis and vulnerability discovery
- **Beaver Works Summer Institute (BWSI)**
  - Elite summer program for rising high school senior ~ 200 participants summer 2018
  - Hands-on courses with a focus on robotics and AI
- **Other activities**
  - Cyber Capture the Flag (university teams)
  - Cyber Patriot Teams (high school teams)
  - LL IAP courses
  - Lincoln seminar series

Lincoln Laboratory AI Supercomputer Upgrade

	Capability
Processor	Intel Xeon & Nvidia Volta
Compute Cores	737,000
Peak	7.4 Petaflops
Top500	4.7 Petaflops (#32 in World*)
Memory	172 Terabytes
Peak AI Flops	100+ Petaflops (#6 in World*)
Network Link	Intel OmniPath 25 GB/s

Largest zero carbon emission system in Top500

- Significant increase in computing power for simulation, data analysis, and machine learning
- Leverages power of 900 Nvidia Volta accelerators
- <u>Largest AI System at any University in the World</u>

*Based on 2018 Top500.org
AI Flops = 4x4 matrix multiply half precision in, single precision out

Panelists

- Scott Anderson, Assistant Director of Operations, MIT Lincoln Laboratory
- Michael Corcoran, Assistant Director, Grant and Contracts Administration, MIT Office of Sponsored Programs
- Kara DeNutte, Senior Fiscal Officer, MIT Kavli Institute for Astrophysics & Space Research

MIT Lincoln Laboratory

Lincoln Laboratory is MIT (MIT LL)

Federally Funded Research and Development Center

- Not-for-profit, trusted objective partner for the Department of Defense (DoD) and other federal entities
- Special relationship covered by a Sponsoring Agreement
  - Emphasizes conflicts of interest are not acceptable
- Unlimited data rights for U.S. Government
- Cannot compete against or be a sub-contractor for any for-profit entities (small business exceptions)
- Limitation on amount of directly funded DoD work – manpower and total funding

Lincoln Laboratory is MIT (MIT LL)

98% of MIT LL work is done on a single Air Force Prime Contract

- Sole, source, cost reimbursement contract with no fee
- Approximately 700 individual, mostly incrementally and separately funded project contract lines
- Scope developed between MIT LL and project sponsor technical teams
- Projects require full review and approval by Air Force
- Advance funding with cost principles covered by OMB Uniform Guidance

Lincoln Laboratory is MIT (MIT LL)

2% of MIT LL work is done "off contract"

- Approximately 50 individual projects (Small Business, Cooperative agreements, Collaborative agreements) are ongoing
- Limited to within mission areas on prime contract
- Some review and approval by Air Force – Administrative Contracting Officer
- Same cost principles as "on contract" apply (e.g., overhead burdening)

Lincoln and Campus CAN, and DO, Work Together

General Considerations

- Lincoln is a “secure” facility and requires security clearance for unescorted physical and IT access
- Lincoln is not an “open” campus - Conflict of Interest, export controls, publication release review
- Coordination is encouraged between campus and Lincoln on responses to BAAs (e.g., NIH and NASA)
  - Lincoln announces intent 7-21 days before due date
  - Lincoln staff are strongly encouraged to reach out to likely Campus counterparts in advance

Lincoln and Campus CAN, and DO, Work Together

Lincoln Laboratory is Lead

- Can either be on or off contract
- Scope of work coordinated by technical teams
- No formal subcontract - Internal PO for R&D work to charge expenses to MIT LL project
- Example: Quantum Enhanced Optimization (QEO) sponsored by IARPA (LL funding to RLE)

Lincoln and Campus CAN, and DO, Work Together

Campus is Lead

- Lincoln staff can work on campus projects with Lincoln management approval and COI/Export control review
- MIT funded “Off contract” work has been about 30% of our total off contract actions
- Example: Microwave Radiometer Technology Acceleration (MiRaTA) NASA CubeSat (Aero/Astro funding to LL)

In some cases, sponsor will fund MIT campus and MIT LL separately

- Example: NASA - TESS (NASA funding streams to MKI and LL)

MIT Office of Sponsored Programs

Coordinating with Lincoln Labs

Background

- Situations may occur where a project is funded entirely at MIT Lincoln Lab, on MIT Campus, or in both places
- MIT Campus and MIT Lincoln Lab have different billing systems and different rates
- Determination of Lead is made as result of discussions between MIT PI and Lincoln Technical Staff
- Two Methods:
  - MIT Campus as Lead
  - MIT Lincoln Lab as Lead
- If this occurs in your DLC, coordinate as soon as possible with:
  - Michael Corcoran, MIT Campus, OSP
  - Natalya Luciw, MIT Lincoln Lab

Proposals: MIT Campus as Lead

MIT Lincoln Lab must provide a Statement of Work and Budget to the submitting MIT Campus DLC

No MIT Campus F&A is applied to any Lincoln Lab cost included in the proposal

Lincoln Lab costs should be budgeted as single line item under Other Direct Costs No F&A (Non MTDC)

- NOTE: Lincoln Lab does not have discretionary funding to support Cost Sharing or Under Recovery. Any Cost Sharing or Under Recovery would need to be covered by the DLC submitting the proposal
- NOTE: Lincoln Lab is a restricted facility and may handle controlled information. Please ensure that your OSP Representative and MIT's Export Control Officer are advised if any controlled information is part of your proposal

Post Award: MIT Campus as Lead

OSP sets up WBS child account (from main grant) for MIT Lincoln Lab's charges, with the following parameters:

- Special 1-series
  - *Account number must be specially requested from VPF-cost-objects*
- Account Type = "off-campus"
- Costing sheet: BLANK
- EB adjusted to 0%

No MIT Campus EB, Allocation, or F&A may be charged

MIT Lincoln Lab processes JVs to move charges (including Lincoln Lab's F&A and EB) to the 1 series child account.

Proposals: MIT Lincoln Lab as the Lead

MIT Campus submits proposal to Lincoln Lab

Proposal must include Statement of Work and Budget

- NOTE: MIT Lincoln Lab does not have discretionary funding to support Cost Sharing or Under Recovery. Any Cost Sharing or Under Recovery would need to be covered by the Department Lab or Center submitting the proposal

- NOTE: MIT Lincoln Lab is a restricted facility and may handle controlled information. Please ensure that your OSP Representative and MIT's Export Control Officer are advised if any controlled information is part of your proposal

Post Award: MIT Lincoln Lab as the Lead

MIT Lincoln Lab issues PO to MIT Campus

OSP sets up WBS

- Normal 6-series account

Charge expenses to WBS as normal

MIT Departmental View, Kavli Institute

Proposals

Technical Personnel (e.g. Faculty, Scientists)

- Make connections with MIT Lincoln Lab staff and identify projects
- Decide MIT Campus or MIT Lincoln Lab lead
  - Consider where the majority of the work will take place
- Communicate to proposal preparer

Proposal Preparer

- Reviews the Request for Proposal (RFP)/Broad Agency Announcement (BAA)
  - Confirm funding an FFRDC is allowed
- Prepares MIT Lincoln Lab lead proposal or MIT Campus lead proposal

Proposals: MIT Lincoln Lab as Lead

The Kuali Coeus (KC) Proposal uses MIT Lincoln Lab as Sponsor (Sponsor ID: 009001)

Budget

- MIT Campus DLC prepares a standard proposal budget
- Standard MIT Campus rates apply

PI Certification questions

- Contains standard export control question
- Any questions or concerns, contact Janet Johnston, MIT's Export Control Officer

Proposals: MIT Campus as Lead

KC Proposal with appropriate non-MIT sponsor entered

- MIT Lincoln Lab to provide a full MIT Lincoln Lab Proposal including:
  - MIT Lincoln Lab Scope
  - MIT Lincoln Lab Budget complete with calculated Lincoln Lab rates already applied

KC Budget:

- Standard budget for MIT Campus work with standard burdens
- PLUS *ONE* line item per year in Other Direct Costs - no MTDC, for the MIT Lincoln Lab portion
  - No campus burdens are to be incurred on the Lincoln portion

Award Time

If MIT Lincoln Lab is lead – wait for MIT Campus award set up

If MIT Campus is lead, Kavli Institute suggests:

- When sponsor communicates intent to fund, consider a request to OSP for Pre-award Parent and Child Account in Pending in KC
- Indicate in the OSP request that the child is to be a “1-series” child account (no MIT Campus burdens)
- Once created, communicate to Scott Thornhill
  - The 1-series number for his “Mirror” account set up at Lincoln, Division and MIT Lincoln Lab proposal contact
  - When the Award is received and account ACTIVE, Provide Scott Thornhill the $$ amount

During the Life of Award

MIT Lincoln Lab as Lead

- Standard Monitoring of project costs
- Billing is captured in KC as Special Handling “No Dunning”
- Funds are transferred “from and to”

MIT Campus Lead projects with a 1-series:

- Check charges and categories against MIT Lincoln Lab Budget
- Confirm appropriate
- Contact Scott Thornhill with questions

Key Takeaways

MIT Lincoln Lab is part of MIT Campus, but there are very distinct differences

MIT Lincoln Lab and MIT Campus collaborate in a broad range of areas

There is an intention to collaborate more because there is strength in that collaboration

Questions

Contacts at Lincoln Laboratory

- Coordination on technical projects: Technical staff interaction
- Technology Office: Bob Bond, rbond@ll.mit.edu
- Contract questions: Natalya Luciw, nluciw@ll.mit.edu
- Financial questions: Scott Thornhill, thornhill@ll.mit.edu
- Beaver Works: Joel Grimm, grimm@ll.mit.edu
- New MIT professor orientation: Israel Soibelman, isoibelman@ll.mit.edu
- Teaching and Capstone Projects Coordinator: Bob Shin, shin@ll.mit.edu