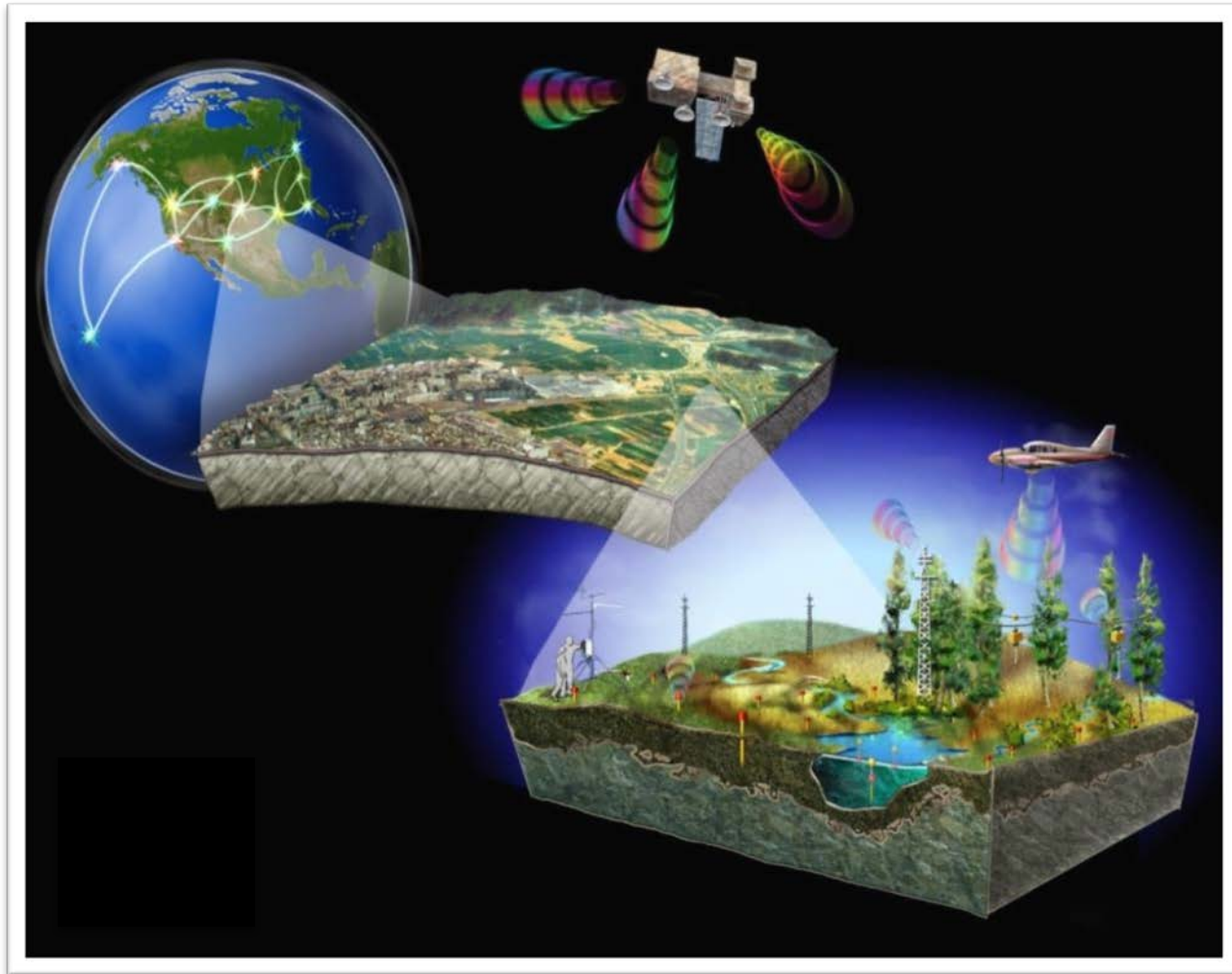


National Ecological Observatory Network



The National Ecological Observatory Network will usher in a new era of observational science as the **first research observatory** designed to advance fundamental theories of life.

NEON: Science Engagement



James L. Olds
Assistant Director
Directorate for Biological Science
National Science Foundation
4301 Wilson Boulevard
Arlington, VA 22230

Dear Dr. Olds,

The American Institute of Biological Sciences (AIBS) and the Ecological Society of America (ESA) want to thank you, Sonya Mallinoff, Liz Blood and Jane Silverthorne for meeting with us to discuss the engagement of the scientific community in NEON. As you are well aware, our two organizations have

- Increased data availability is allowing early science and enhanced engagement
 - BIO Science Engagement Working Group
 - Professional Societies
 - Federal Agency Partners

Current Construction Status

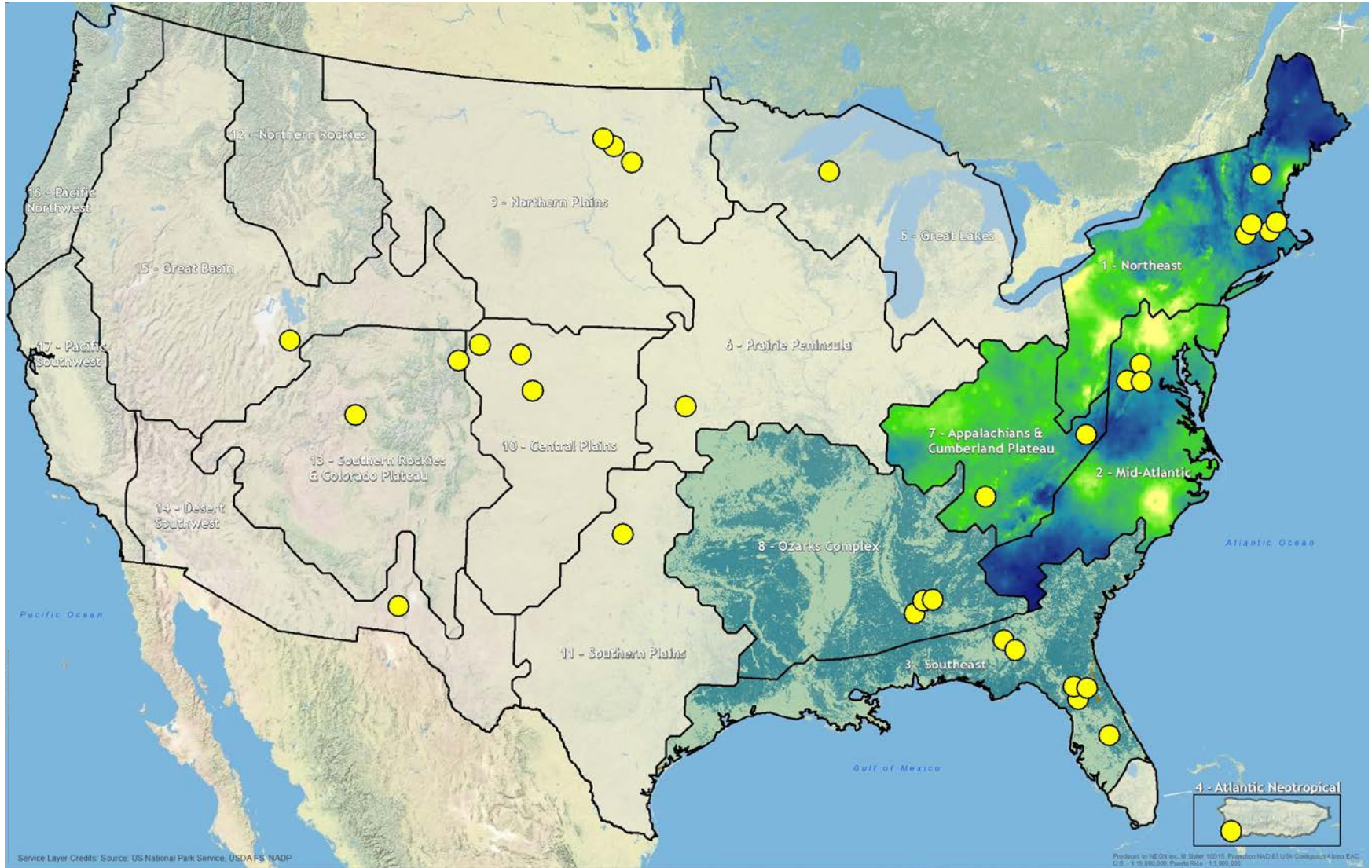
- **Civil Construction**
 - 40 of 106 locations
- **Sensor Deployment**
 - 14 locations in 8 domains
- **Biological Sampling**
 - 19 of 106 locations
- **Domain Field Offices**
 - 13 of 20 operating with Domain Managers hired

Three Airborne Observatory Platforms

- ✓ Pathfinder flight in July
- ✓ 4 domains have been remotely surveyed
- ✓ 2 additional domains to survey in 2015
- ✓ Payload Installation Facility occupied by Flight Operations



Schedule Highlights

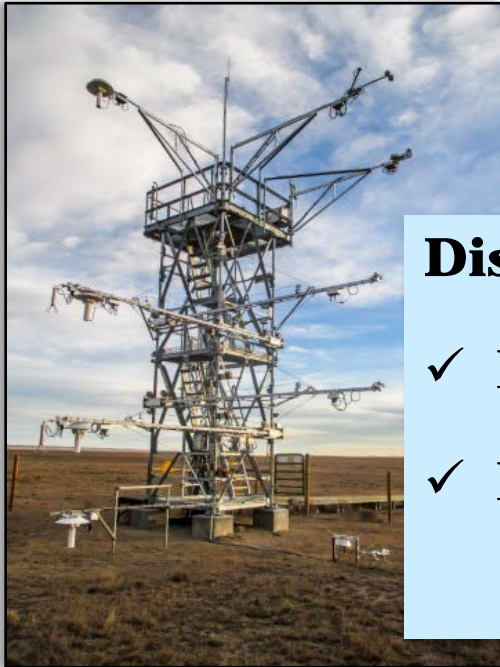


NEON Initial Observatory Capability (IOC) scope

Current Operations Status

Central Operations

- ✓ Calibration and Validation Lab
- ✓ Collections and Laboratory Analyses
- ✓ Project BudBurst/Citizen Science Academy



Distributed Operations

- ✓ Domain 03 Florida and Georgia
- ✓ Domain 10 Colorado



NSF Oversight

Past 12 Months:

- ✓ Site visits, reporting, and virtual meetings
 - Processes, product development, designs
- ✓ Formal reviews
 - Schedule and cost review
 - Annual Construction Workplan review



Production/ Manufacturing/
Procurement



Data product
development and delivery

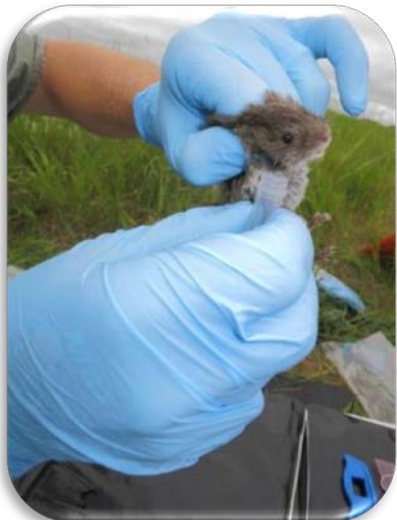


Biological designs and
protocols



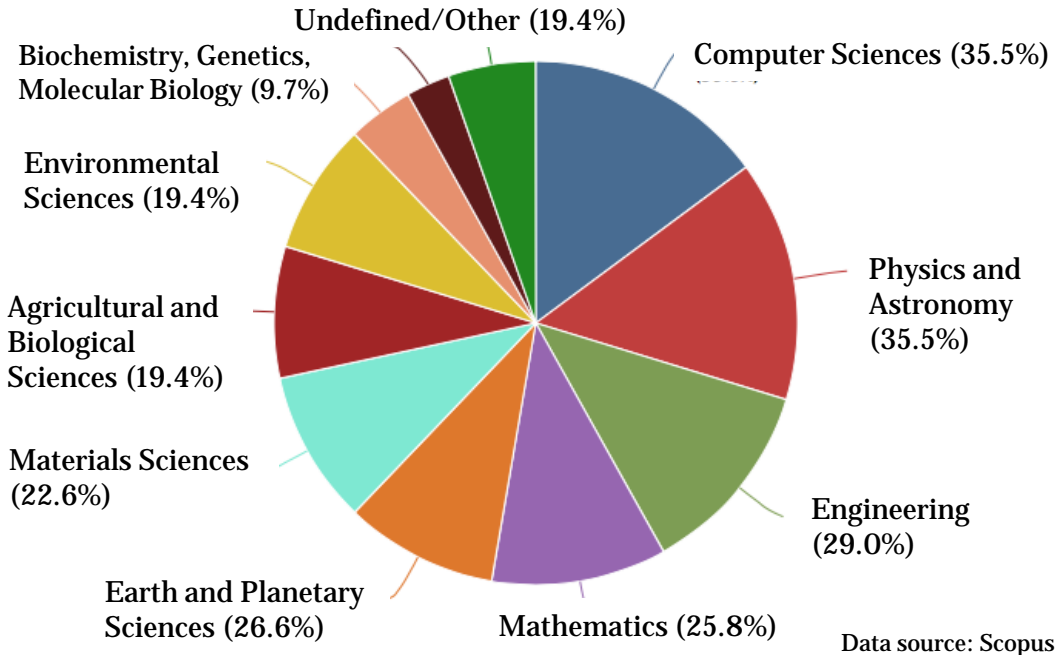
Next 12 months:

- ❑ Site visits, reporting, and virtual meetings
 - Processes, product development, designs
- ❑ Formal reviews
 - Construction and Operations subsystem reviews
 - Annual Construction Workplan review
 - Annual Operations Performance Plan review



NEON Science

NEON-related publications in past 5 years

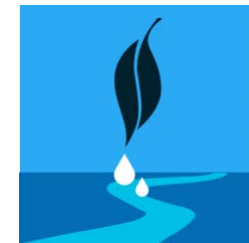
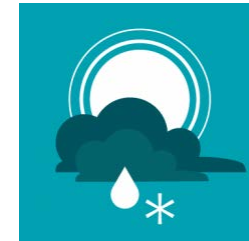


70 NSF Active Awards

BIO: *DBI, DEB, EF*

CISE: *ACI, CCF*

GEO: *EAR, ICER, PLR*



Ecological forecasting and data assimilation in a data-rich era

Luo, Y., K. Ogle, C. Tucker, *et al.* (2011) *Ecological Applications*

Ecological Patterns of *nifH* Genes in Four Terrestrial Climatic Zones Explored with Targeted Metagenomics Using FrameBot, a New Informatics Tool

Wang, Q., J.F. Quensen III, J.A. Fish, *et al.* (2013) *mBio*®

NEON: the first continental-scale ecological observatory with airborne remote sensing of vegetation canopy biochemistry and structure

Kampe, T.U., B.R. Johnson, M. Kuester, & M. Keller (2010) *Jrnl Applied Remote Sensing*

BACK-UP SLIDES

Accomplishments

LEADERSHIP

- ✓ Key experienced managers in place for NEON Construction (Javier Marti) and NEON Operations (Christopher J. Loria)

CONSTRUCTION

- ✓ Highly successful schedule and cost review (August 2014) and FY2015 annual work plan review

OPERATIONS

- ✓ Early data available; NEON data portal launched in November
- ✓ Initial operations at constructed sites began in January

To realize this vision, the observatory integrates fixed, flexible, and mobile sensing systems to support persistent sensing, synoptic campaigns, facilitate experiments across gradients of change, and assess episodic events.



3 Airborne Observatories



NEON Headquarters: Control Center

CAL/VAL, Fabrication, Maintenance & Repair ,
and QA/QC Laboratories
Education/Outreach Portals/Tools



Biological Assessments:
Field, Laboratory,
BioArchive, Data
Products

Collections of data on
plants, animals, microbes
(~ 3 TB data/yr)

Sensor/Instrument Packages: (~12,000 sensors
generating ~30 TB data/yr)

- » 60 Fundamental Instrument Units (tower, instrumentation hut, sensor nets)
 - 20 Permanent – Continental Scale
 - 40 Relocatable – Regional Scale
- » 30 Stream Sensor Nets and 6 Lake Buoys
- » 10 Experimental Stream Systems
- » 10 Mobile Labs

Initial Operations Capability

- Connection with Nitrogen deposition and forest management data
- Infrastructure
- Qualified processes of the Observatory
- Organismal sampling, laboratory analysis and collections
- AOP selected flight campaigns
- Mobile Deployment Platform prototype complete
- Meteorological, biological and remote sensing data available on the portal
- Educational programs
- Calibration and validation
- Domain support facilities (4)
- Web Portal

