About Lewis-Burke

• Twenty-seven policy experts with range of expertise/backgrounds allow multi-layered issue teams with deep expertise in agencies and scientific/education areas
• Support federal relations activities to develop and implement federal strategies to pursue, shape, and create new sources of funding to increase and diversify research portfolio
• Able to engage on multiple levels:
  – Individual faculty (including early career faculty)
  – Teams of faculty
  – Associate Deans for Research
  – Deans and Center Directors
  – University leadership and campus-wide priorities
Today’s talk

• Agencies:
  – NSF
  – USDA
  – NEH
  – NIH
  – DOE
  – DOD

• Engaging with program officers
  – Preparing for meetings
  – What to expect and how to follow up
  – Answering your questions
National Science Foundation (NSF)
Recommendations for CAREER

- CAREER awards: research proposed should be expansive enough to build a career on – very narrow research aims will not be competitive.
- Strategy and expectations vary by division; important to speak to program director before applying.
- Expectations related to education components also differ by division.
  - Some divisions like to see more focused education projects.
  - Others want to see efforts that check a number of boxes, the education component has to be integrated with the research proposed and for some divisions (broadening participation, undergraduate research, etc.)
  - Department chair’s letter of support is helpful to show how education efforts would be of value to the department and its students.
- Think carefully about when to apply as you only get a few chances.
  - First CAREER proposals often rejected because of presentation. Pay attention to details.
  - Don’t submit at the very beginning of your career.
  - Don’t wait so long that you can’t use your second and third tries.
  - The odds of obtaining a CAREER go up on the second try, so it’s important not to get discouraged.
Engaging with NSF

• Research the program/solicitation
• Engage with your sponsored research office on campus – they know NSF rules
• Contacting NSF:
  – Email first rather than phone and be specific
  – Provide details of the program/solicitation/award number that you want to discuss
  – Any attachments summarizing your research should be no more than 1-2 pages and should be tailored to that program officer
  – It’s OK to follow up with program officers, but don’t overdo it
  – Always be courteous – get feedback if their response is disappointing

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Engaging with NIFA

• Very receptive to meetings/phone calls/email communication

• Unlike other agencies, NIFA program staff are able to communicate with applicants throughout the application and grant-making process

• You can find contact information for relevant program staff listed online, as well as specific program leads associated with each program in the RFA.

• Most program priority areas have standard awards, Coordinated Agricultural Projects (CAPs), and Food and Agricultural Science Enhancement (FASE) grants
National Endowment for the Humanities (NEH)
Engaging with NEH

• Nearly 50 percent of the funding goes directly to support state humanities councils and the agency’s administration, with most of the rest slated for grants, education and public programming.

• NEH programs are organized through several divisions/offices, including: Divisions of Education Programs, Preservation and Access, Public Programs, Research Programs, Office of Digital Humanities, and State and Federal Partnerships Office.

• Majority of NEH program solicitations are released on annual basis.

• Program managers encourage submission of draft proposals (available with most opportunities) and are happy to speak and meet with interested researchers and educators.

• Faculty and researchers can also participate in NEH-funded summer programs for university faculty or in the digital humanities training institutes.

• Additional funding opportunities are available through NEH-funded state humanities councils.

• Faculty are encouraged to inquire with program officers about sitting on NEH review panels.

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National Institutes of Health (NIH)
How NIH Supports Researchers

• **Types of Funding Opportunity Announcements (FOAs)**
  – Investigator-initiated applications that should align with program/Institute mission and goals
  – Program announcements: FOAs highlight areas of scientific interest (new or ongoing programs)
  – Requests for Applications: FOAs highlight well-defined areas of scientific interest to accomplish specific program objectives

• **Types of NIH grant mechanisms**
  – Research Project Grants (typically individual awards, but can sometimes have co-PIs)
    • R01: most commonly used grant program; NIH’s signature award (typically 5 years)
    • R03: limited funding to support pilot studies, secondary analysis of existing data, etc. (2 years)
    • R21: exploratory research projects, pilot and feasibility studies, limited funding (2 years)
    • SBIR and STTR
  – Program Project or Center Grants (P awards; U awards)
    • Large, multi-project research efforts
    • Collaborative funding mechanisms enhance program officers’ input on projects
  – Training and Fellowships Grants
    • Support for graduate students and postdocs (individual and institutional awards)
Support for Early-Stage Faculty

- **Next Generation Researchers Initiative (NGRI)**
  - Concerns that the majority of NIH funding is concentrated in a small percentage of researchers—want to fund more individual researchers doing a broader array of science
    - New concerns over achieving the second R01 or equivalent
    - $100 million dedicated fund in OD proposed in FY 2019 budget
- **New Investigators (NI) policy**: NIH Institutes and Centers will make funding decisions that ensure the success rates for NIs on research grant applications is comparable with success rates from established investigators
- **Early-Stage Investigator (ESI) policy**: NIH Institutes and Centers will make funding decisions that ensure at least half of the awarded new investigators are within 10 years of completing their terminal degree
- NIH, led by NIGMS, continues to explore new ways to advance research and support more individual investigators
  - R35 mechanism (people vs. projects)
  - Select pay across ICs enables program leaders to fund proposals above payline that meet priorities and unmet needs or to support new investigators

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Engaging with NIH

• Understand the type of FOA and the type of grant mechanism you are applying for
  – R03, R21 awards provide smaller amounts of funding to encourage exploratory research, pilot
    studies, preliminary data collection (ramp up to the R01)
• Identify the program officer associated with the solicitation/program
• Engage with your sponsored research office on campus for insight on NIH processes
• Contacting NIH:
  – Email first rather than phone: summarize your research aims and how it fits into program officer’s
    portfolio or solicitation
  – Any attachments summarizing your research should be no more than 1-2 pages
  – Always be courteous and seek specific feedback
  – Contact sponsored research or Lewis-Burke if getting no response from program officer
• Review the list of peer review panels and members on the Center for Scientific Review website
• Seek insight from program officer on peer review panels most appropriate to review proposal
• Suggest preferred panel on cover letter accompanying proposal
NSF vs. NIH

- NSF is concerned with health of disciplines it supports and advancing fundamental science

- NSF is more heavily focused on teaching, student mentoring, broadening participation, and broader impacts – every proposal must address broader impacts

- NSF peer review is organized by program directors on an ad hoc basis – no standing panels; NIH has regular standing study sections that meet three times a year

- NSF program directors have more flexibility in determining program directions and funding decisions – proposal pressure and peer review are still main drivers; NIH applications largely go through the Center for Scientific Review

- NSF CAREER program to support early career researchers – embedded in every division (you can talk to any program director about this program)
Department of Energy (DOE)
Engaging with DOE

- **Office of Science**
  - Basic, fundamental research for energy and national security missions in 6 major program areas (materials research, advanced computing, biosciences and climate change, nuclear physics, particle physics, and fusion and plasma sciences)
  - Targeted funding opportunity announcements (FOAs)
  - Financial Assistance Program—open year round for all research areas, innovative ideas outside of targeted funding solicitations (planned release in early May)
  - Early Career Research Program—usually 52 early career scientists and researchers selected each year in the 6 major Office of Science disciplines, Fall 2018 planned for new competition
    - at least $150k per year over five years and must be within 10 years of having received a Ph.D. and untenured assistant or associate professors on tenure track
  - Program managers very accessible and discussions with program managers before submitting applications increase chance of success
  - Other signature funding mechanisms: Energy Frontier Research Centers, Energy Innovation Hubs, computational sciences

- **Applied energy programs**—Renewables, energy efficiency, fossil, nuclear, grid
  - Each applied energy program has yearly FOAs for early-stage, innovative technologies (e.g., BENEFIT, NEUP, fuel cells and hydrogen, solar technologies, bioenergy)
  - Larger-scale signature funding mechanisms: Energy Innovation Hubs (new Desalination Hub competition Summer 2018), consortiums, traineeships, Clean Energy Manufacturing Institutes

- **SBIR/STTR**
- National lab partnerships—DOE national labs subcontract $500 million to universities, mainly in direct PI-to-PI collaborations

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Department of Defense (DOD) Research Enterprise and Defense Health Priorities
DOD Organization

- Approximately $2 billion basic research across research offices
- Approximately $480 million basic and applied research
- Approximately $1.5 billion defense health research

- Army Research Lab/Army Research Office
  - Army Research Development Engineering Centers
- Navy Warfare Centers
- Air Force Research Lab/AFOSR
  - Air Force Acquisition Programs
Signature DOD Funding Mechanisms

- Standard grants and contracts –
  - Broad Agency Announcements
  - Special program announcements (e.g. Minerva, Multi-disciplinary University Research Initiative (MURI), Young Investigator Programs)
  - Also summer faculty research opportunities
- Cooperative Research Agreement (CRA)
- Cooperative Technology Agreement (CTA)
- Center of Excellence (COE)
- Indefinite Delivery Indefinite Quantity (IDIQ) contracts
- SBIR/STTR
DOD Funding Mechanisms, cont’d

• **Broad Agency Announcements (BAAs)** are competitive solicitations for basic and applied research proposals

• **Multidisciplinary University Research Initiative (MURI)** program supports research conducted by teams of investigators that intersect more than one traditional science and engineering discipline in order to accelerate research progress

• **Vannevar Bush Faculty Fellowship (formerly NSSEFF)** provides extensive, long-term financial support to distinguished university faculty and staff scientists and engineers to conduct unclassified, basic research on topics of interest to DoD

• **Minerva Research Initiative** initiated by former Secretary Gates in 2008, “seeks to build deeper understanding of the social, cultural, and political dynamics that shape regions of strategic interest around the world.”

• **Young Investigator Programs (YIP)** or DARPA Young Faculty Award – awards range in size from $50k - $170k per year
Steps to Effectively Engage DOD

• Meet program managers, laboratory subject matter experts, invite government researchers to give Department seminars
  – Even formal opportunities, e.g. DARPA Discover DSO Day (Mar 28 deadline)
• Attend conferences
  – Annual Air Force leadership meeting (Every Sept): https://www.afa.org/airspacecyber/home
  – AFOSR young investigator event (October 24-27): https://community.apan.org/wg/afosr/w/researchareas/19426/2017-
    young-investigator-research-program-yip-meeting/
• Review program websites, BAAs, and past solicitations to find relevant programs
• Submit white paper ahead of application to assess fit to program, get feedback, and potentially shape future solicitations
• Have more than one idea to propose
• Be prepared to adapt your research to meet program managers’ goals
• Other considerations:
  – Fellowships
  – Postdoc Support (most if not all have support for rotations or funded support)
  – Equipment (DURIP)
  – Seed grants (flexibility)
  – Small Business (different type of funding)
FOA Resources

Funding Opportunity Postings:
- [www.grants.gov](http://www.grants.gov)
- [www.eBRAP.org](http://www.eBRAP.org)
Engaging DOD vs. NIH

• Start with the DOD challenge; NOT the research idea
• Program managers have broader authority and more flexibility
• Only some programs use peer review; more ad hoc, not always external
• Collaborations with DOD medical commands and centers are important to long-term success
• New managers often change program goals and direction
• Process to request DOD data from Military Health System
• Opportunities to engage locally/regionally
Ways to Propose

White Paper Framed by Heilmeier Questions

• What are you trying to do? Articulate your objectives using absolutely no jargon. What is the problem? Why is it hard?
• How is it done today, and what are the limits of current practice?
• What's new in your approach and why do you think it will be successful?
• Who cares?
• If you're successful, what difference will it make? What impact will success have? How will it be measured?
• What are the risks and the payoffs?
• How much will it cost?
• How long will it take?
• What are the midterm and final "exams" to check for success? How will progress be measured?
DOD – Medical/Health Research

• DOD Health Research Priorities: approximately $1-1.5 billion invested

• Priorities include:
  – Mental health/PTSD
  – Traumatic Brain Injury
  – Enhancing warfighter performance
  – Infectious disease
  – Casualty care
  – Chemical and biological warfare defense

• Also involved in multi-agency priorities, including:
  – Global Health Security Agenda (biosurveillance, antimicrobial resistance, and infectious disease research and response)
  – Big Data: data sharing standards, software tools, enhanced training, centers of excellence
  – BRAIN: targeted investment to accelerate development of neurotechnologies
  – Alzheimer’s and aging: new investments in research and care to address looming in patients and costs
Two-tier review process: **peer review** for scientific merit and **programmatic review** to ensure the DOD mission and needs are met

**Peer Review**
- Evaluate scientific merit
- Provide written critique and scores for criteria and overall merit
- Panels comprised of scientific and consumer reviewers
- No standing peer review panels
- No contact between reviewers and applicants

**Programmatic Review**
- Proposals with high scientific merit compared for programmatic review
- Evaluate relevance to mission and DOD
- Evaluate adherence to award mechanism’s intent (ex. new idea v. clinical trial)
- Consider portfolio composition
- Provide recommendations for funding
- No pay line
- Funds obligated up front
- No continuation funding
CDMRP - continued

- Proposal windows vary throughout the year
- Pre-application required
- **Highly competitive**: Success rates average around 15% (range of 10-30 percent)
- Various research awards at all career stages:

### Research Awards

- Initial Concepts
- Early Ideas
- Clinical/Translational
- Team Science
- Clinical Trials

### Career Development

- Predoctoral
- Postdoctoral
- Physician Scientist
- New Investigator
- Established Investigator

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U.S. Army Medical Research and Materiel Command (USAMRMC)

• Headquartered at Ft. Detrick, Maryland (collaborations listed below)
• Supports priority research disciplines (~$150 million):
  – **Military Infectious Diseases** (~$36m)
    • Walter Reed Army Institute of Research
    • U.S. Army Medical Research Institute of Infectious Diseases
  – **Combat Casualty Care** (~$27 m)
    • U.S. Army Institute of Surgical Research
    • Walter Reed Army Institute of Research
  – **Military Operational Medicine** (~$57m)
    • U.S. Army Research Institute of Environmental Medicine
    • U.S. Army Aeromedical Research Laboratory
    • Walter Reed Army Institute of Research
  – **Clinical and Rehabilitative Medicine Research Program** (~$18m)
USAMRMC: New Products and Ideas Portal

Web interface to the research and industrial community for feedback on new ideas.

Helpful hints
- Use a white paper for cutting and pasting relevant sections into the submission forms
- Once your submission occurs it will be routed to the appropriate MRMC directorate and you should get feedback in ~ 30 days
- Have issues with the website - call at 301.619.1880.

Engaging with Program Officers
Benefits of Meeting with Federal Agencies

• Relationship-building opportunity
• Receive first-hand information about research funding opportunities
  – Be on both “send” and “receive”
• Learn of non-funding ways to engage with the agency, such as serving on review panels or advisory councils

Lewis-Burke can help identify specific meeting targets based on research and objectives
Prior to the meeting

• Review the programs of the officials with whom you will be meeting and other relevant funding opportunities at their agencies.
  – As you review program descriptions and past solicitations, note places of potential fit to your areas of interest so you can ask specific questions.
• Prepare a one-page description of your research that may be left behind with the program staff, or sent ahead if that has been requested.
  – Including your contact information
  – Research descriptions should be consistent with areas of interest of the targeted agency program staff.
• Speak to more senior investigators who are funded by the federal agencies at which you will be meeting about their experiences and insight into the agencies and programs.
• Prepare questions to ask in the meetings.
On the day of the meeting

• Appropriate dress: business attire.
• Bring:
  – Business cards
  – Copies of your research descriptions.
• Be prepared to:
  – Give a short introduction (5 minutes) about you and your work.
  – Talk succinctly and clearly about your current and future research interests.
  – Ask questions.
  – Take notes.
  – LISTEN to their answers.
  – Thank them for meeting with you.
Example questions to ask in meetings

• What are the areas of interest of your program?
• What are the emerging areas of interest at the agency in your area?
• What are the mechanisms to seek funding at your agency and in your program? Are there targeted solicitations? Are you open to unsolicited proposals? Is there a recommended approach?
• How can I better prepare to submit proposals? At what point in the process is it appropriate to discuss specific project ideas with agency personnel/program staff? What kind of feedback can I expect?
• What are the success rates, and what helps with resubmittals?
• Are there opportunities to serve as a reviewer or on advisory committees?
• Are there researchers whose work you would suggest I look into or that I collaborate with?
• Are there workshops or events you would suggest I participate in or help organize?
• Are there program officers at this or other agencies you recommend I contact?
Meeting follow-up

• Upon returning to campus, submit appropriate thank you emails to each of the meeting participants.
  – These emails should display an appreciation for the meeting, a quick reference to or summary of the issues discussed, any follow-up actions or conversations agreed to, and supplemental information if applicable.
• As you initiate contact with various agency officials, it is crucial that you maintain open lines of communication, especially if these contacts have displayed a willingness to accept unsolicited research proposals or provide unofficial advice.
• Federal program officials can be key advisors and sources of information throughout the challenging grant application process.
Thank You For Your Time

Questions?

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Social Sciences

- SBE important component of many NSF cross-cutting programs
- Increasing concerns within SBE around reproducibility
- **Behavioral and Cognitive Sciences** (BCS) Division is concerned with geography, archeology, anthropology,
- **Social and Economic Sciences** (SES) Division focused on sociology, economics, technology impacts on society,
- Cross cutting
  - Dynamics of Coupled Natural and Human Systems (CNH)
Education and Human Resources

- Joan Ferrini-Mundy, former EHR AD, now Acting Chief Operating Officer
- Research on STEM teaching and learning across audiences and settings (preK-12, undergraduate, adult, informal, formal, etc.)
- Major focus on broadening participation
- Evaluation is essential
- Concern with scaling potential and impact
  - Awards at all sizes from smaller pilots to large scale efforts
- Additional focus on workforce development
  - Graduate Research Fellowships
  - NSF Research Traineeships
  - Broadening Participation programs to support workforce development at minority serving institutions

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Defense Threat Reduction Agency (DTRA)

• Basic and applied research on bio/chemical/nuclear/information sciences geared towards countering weapons of mass destruction

• Chemical-Biological Research (~60 million)
  – Non-medical: Nano, cognition, information science, bioscience
  – Medical Biological Defense Transformational Medical Technologies Initiative: Diagnostic Technology, Vaccine, Therapeutic – viral, toxin, bacterial
  – Medical Chemical Defense – Smallest Area: Respiratory, Cutaneous and Ocular, Neurological, Toxicology

• Working with DTRA
    • New way for researchers to engage DTRA program managers by submitting a quad chart and white paper narrative to gauge interest in an idea and receive informal feedback.
  – Annual BASIC RESEARCH TOPICS call for pre-application white papers
  – Multi-year BAA, specific topics change annually based on program manager interest - little feedback
Defense Advanced Research Projects Agency (DARPA)

• DARPA funds high-risk, high-reward basic and applied biomedical research; game-changing R&D around future threats

• Seven technical offices: Adaptive Execution (AEO), Biological Technologies (BTO), Defense Science (DSO), Information Innovation (I2O), Microsystems Technology (MTO), Strategic Technology (STO), and Tactical Technology (TTO)

• BTO, DSO support most of DARPA’s biomedical and health technologies research

• Current Programs addressing
  – Prosthetics
  – Traumatic Brain Injury
  – Brain computer interface
  – Brain/Neuroscience
  – Chem-bio and infectious disease threats
CDMRP – FY 2018 Topics

Bolded items reflect increases in FY 2018

- Peer-Review Medical ($330 m)
- Breast Cancer ($130 m)
- Traumatic Brain Injury and Psychological health ($125 m)
- Prostate Cancer ($100 m)
- Peer-Review Cancer ($80 m)
- Joint Warfighter Medical ($50 m)
- Peer-Review Orthopedic ($30 m)
- Spinal Cord ($30 m)
- Gulf War Illness ($21 m)
- Ovarian Cancer ($20 m)
- Neurotoxin Exposure Treatment Parkinson's ($16 m)
- Alzheimer’s Disease ($15 m)
- Kidney Cancer ($15 m)
- Neurofibromatosis Research ($15 m)
- Vision ($15 m)
- Lung Cancer Research ($14 m)
- HIV/AIDS program increase ($12.9 m)
- Reconstructive Transplant ($12 m)
- Trauma Clinical ($10 m)
- Amyotrophic Lateral Sclerosis ($10 m)
- Hearing Restoration ($10 m)
- Orthotics and Prosthetics ($10 m)
- Global HIV/AIDS prevention ($8 m)
- Military Burn ($8 m)
- Epilepsy ($7.5 m)
- Autism Research ($7.5 m)
- Tuberous Sclerosis ($6 m)
- Multiple Sclerosis ($6 m)
- Tick-Borne Disease Research ($5 m)
- Lupus ($5 m)
- Alcohol and Substance Abuse ($4 m)
- Duchenne Muscular Dystrophy ($3.2 m)
- Bone Marrow Failure ($3 m)
Peer Reviewed Medical Research Program (PRMRP): FY 2018 Topics

- Acute Lung Injury
- Antimicrobial Resistance
- Arthritis
- Burn Pit Exposure
- **Cardiomyopathy** *
- **Cerebeller Ataxia** *
- Chronic Migraine and Post-Traumatic Headaches
- **Chronic Pain Management** *
- Congenital Heart Disease
- Constrictive Bronchiolitis
- Diabetes
- Dystonia
- Eating Disorders
- Emerging Infectious Diseases
- **Endometriosis** *
- Epidermolysis Bullosa
- Focal Segmental Glomerulosclerosis
- Fragile X Syndrome
- Guillain-Barre Syndrome
- Hepatitis B and C
- Hereditary Angioedema
- Hydrocephalus
- Immunomonitoring of Intestinal Transplants
- Inflammatory Bowel Diseases
- Interstitial Cystitis
- **Lung Injury** *
- Malaria
- Metals Toxicology
- Mitochondrial Disease
- Musculoskeletal Disorders
- Myotonic Dystrophy
- Nonopioid Pain Management
- **Nutrition Optimization** *
- Pancreatitis
- Pathogen-Inactivated Blood Products
- Post-Traumatic Osteoarthritis
- **Pressure Ulcers** *
- Pulmonary Fibrosis
- Respiratory Health
- Rett Syndrome
- Rheumatoid Arthritis
- Scleroderma
- Sleep Disorders
- Spinal Muscular Atrophy
- Sustained-release Drug Delivery
- Tinnitus
- Tissue Regeneration
- Tuberculosis
- Vaccine Development for Infectious Diseases
- Vascular Malformations
- Women's Heart Disease

*Denotes new topic in FY 2018
National Science Foundation (NSF)

- FY 2018 Funding: $7.767B, increase of $295M or 3.9% over FY 2017
- FY 2019 budget request includes focus on **10 Big Ideas for Future Investment**
  - $30M proposed for each research idea: Harnessing the Data Revolution; Future of Work at the Human-Technology Frontier; Windows on the Universe; Quantum Leap; Rules of Life; Navigating the New Arctic
  - New “**Convergence Accelerators**” proposed - Harnessing the Data Revolution ($30M) and Work at the Human-Technology Frontier ($30M)
  - Funding proposed for Process Ideas: Mid-Scale Research Infrastructure ($60M); NSF 2026 Fund ($6.5M); INCLUDES ($20M); Growing Convergence Research ($16M)
  - Several open competitions for FY 2018: NNA Dear Colleague, 2 Quantum Dear Colleagues, FW-HTF (LOI Due 6/4), TRIPS+X (Proposals Due 5/29), INCLUDES Alliances (Proposals Due 4/4)
- Large Center Awards:
  - STC solicitation expected to be released late in FY 2018
  - New ERC planning grants (Proposals due 6/6); full solicitation not expected until 2019
- Obama-era Initiatives Winding Down: INFEWS; Risk and Resilience; Understanding the Brain; Cyber-enabled Materials, Manufacturing, and Smart Systems (CEMMSS)
- International offices closing this summer (Brussels, Tokyo, and Beijing) – expect more ad-hoc international engagement
- Relatively new leadership in ENG, GEO, MPS directorates will drive new priorities
  - Search ongoing for BIO, SBE, EHR, and soon CISE

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U.S. Department of Agriculture (USDA)

- The National Institute of Food and Agriculture (NIFA) is the extramural research arm of USDA that supports university and industry researchers across the U.S.
  - The broad research categories are determined set for the agency by the Farm Bill
    - 2014 Farm Bill expires in September 2018
  - House may move to pass a highly partisan bill soon BUT major disagreement on SNAP/nutrition
    - Removed AFRI matching req, authorized flat $700M (current level) funding, no funding for FFAR
  - Senate will be more bipartisan – May? But extension likely
- NIFA functions in three main areas:
  - Research: Extramural programs
  - Education: Fellowships for pre and postdoctoral students
  - Extension: Also known as capacity funds; managed through USDA’s ‘special relationship’ with land-grant universities
NIFA/AFRI

- NIFA’s primary competitive extramural research program is the Agriculture and Food Research Initiative (AFRI): $400M in FY 18 Omnibus (increase of $25M) bipartisan support for AG research
- Solicitations are offered once a year, usually delayed to the SPRING
- FY 18 Program Changes:
  - Program changes for FY 18: **Sustainable Agricultural Systems** replaces the challenge grants into 1 big program: “convergence S&T to solve food/AG production system challenges” focus on 25-year goals: **$80M avail for 8 $10M Coop AG Project** (CAP) grants: LOI due June 27
    - Continued support for AFRI challenge grants from previous years
  - **Foundational and Applied**: at least $221M: awaiting RFA
    - $10M dedicated to plan and animal breeding
    - $11M dedicated to microbiome of foods, food animals, plants, soils
    - $11M dedicated to data-driven research “Food and AG Cyberinformatics and Tools (FACT) Initiative”
  - **Education and Workforce**: “strategic pipeline based approach”: awaiting RFA
    - Developing Pathways: institutional grants for internships, externships, study abroad, experiential opps in research and extension
    - Advancing Science: will support grad and post-grad fellowships
NEH Overview

• NEH functions in three main areas:
  – Research Programs
  – Education Programs
  – Federal/State Partnerships

• FY 2018 Omnibus provided $153M, a $3M increase over FY 17 enacted level.
• Newly confirmed NEH Chair Jon Parrish Peede has will likely develop new focus areas and initiatives, but has shown interest in rural area support.
  – Peede has effectively acted as Chairman since previous Chair Bro Adams stepped down in 2017.
• NEH has continued current grant-making activities and agency-wide initiatives, including its signature Standing Together Initiative to promote an understanding of the experience of war.
• NEH launched a new Infrastructure and Capacity-Building Challenge Grants program earlier this year.
National Institutes of Health (NIH)

- NIH received $3 billion increase in FY 2018, bringing the agency to $37.1 billion in total funding
- 27 Institutes and Centers organized largely by disease and/or body system, including:
  - National Cancer Institute (NCI)
  - National Institute of Allergy and Infectious Diseases (NIAID)
  - National Heart, Lung, and Blood Institute (NHLBI)
  - National Institute on Aging (NIA)
  - National Institute of General Medical Sciences (NIGMS)
- Current areas of trans-NIH emphasis:
  - Opioids, addiction, pain management ($500 million in 2018)
  - Alzheimer’s Disease ($1.8 billion investment in FY 2018)
  - BRAIN Initiative ($400 million in FY 2018)
  - Precision Medicine ($290 million in FY 2018)
  - Cancer ($300 million in FY 2018)
  - Biomedical Data Science Strategic Plan

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Department of Energy (DOE)

- The Department of Energy (DOE) has 3 core missions:
  - Science and Energy (basic and applied research)
  - Nuclear Security
  - Environmental Management
- FY 2018 Funding: $34.5B, increase of $3.8 billion or 12% over FY 2017
- Single largest increase was for the Office of Science ($866 million or 16% above FY 2017) because of bipartisan support for basic research in the physical sciences
  - Top priorities: exascale computing, quantum information science, new and upgraded science facilities, stable funding for Energy Frontier Research Centers
- ARPA-E is not eliminated and is increased by 16% to $353 million
  - Additional funding for the OPEN FOA and possible topics include long duration energy storage, energy-smart farm, high efficiency high temp modular power, high efficiency hybrid vehicles, machine learning-enhanced energy-product development
- All applied energy programs also see major increases with largest growth to nuclear energy
  - Five Clean Energy Manufacturing Innovation Centers and four Energy Innovation Hubs are funded and Congress calls on DOE to move forward with a fifth Hub on Desalination
- Upcoming larger-scale funding opportunities: biosystems design, 2 nonproliferation university consortia, predictive science academic alliance centers, Desalination Hub, emerging building technologies for energy efficiency
Department of Defense (DOD)

- DOD received a 14.2% increase in FY 2018, with the Research, Development, Test, and Evaluation (RDT&E) account receiving $88.3 billion, a 22.1% increase
  - The Science and Technology (S&T) accounts – Basic Research (6.1), Applied Research (6.2), and Advanced Technology Development (6.3) – received $14.8 billion, a 6.1 percent increase
- Advanced Technology Development and Systems Engineering continue to be major priorities as DOD is focused on readiness and modernization
  - Basic Research received a 2.9% increase
- DOD continues to consider new methods of engaging with the extramural research community, like ARL's Open Campus Initiative and the Air Force's on-going S&T study to consider new methods of conducting research

**Opportunities:** DURIP, MURI, Many DARPA BAAs, CDMRP topic, CTTSO BAA, Rapid Innovation Fund

**Major Areas of Interest:**
- Lethality
- Materials/Manufacturing
- Test and evaluation science
- Expedited tech transition and acquisition
- STEM Education
- Strategic Weapons
- AI and Machine Learning
- Space capabilities
- Cybersecurity/Information Assurance

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