

## APLU Deferred Maintenance Committee report

### Strategy Proposal

25 May 2016

The group's charge is to develop a strategic framework for addressing the deferred maintenance challenge for U.S. public universities and agencies involved in research in food, agriculture and natural resources.

There is a compelling need for a major investment in the infrastructure that supports public research in food, agriculture and natural resources. Research spending by private industry has surpassed the public investment manifold, yet private industry still depends on publicly funded research for new advances in fundamental science and in preparing the scientists of the future. While the private investments are critical for ongoing advancements in food and agricultural production, they are limited in scope and are too closely tied to profit generation in the short term to help advance breakthroughs needed in fundamentals of food, plant, animal and environmental sciences.

The recent Sightlines study (Kadamus, et al. 2015) documented a critical need to address aging infrastructure for agriculture, food and natural resource research at public universities. Of 15,596 buildings included in their assessment, containing 87 million gross square feet of space, 52% was built between 1951 and 1990, the period when buildings were built quickly and with lower quality standards and materials. Research facilities built in this time period accounts for 68% of the deferred maintenance costs across the system, which totals \$8.4 billion. The replacement cost of all research space in the system is estimated at \$29 billion.

Failure to address this challenge aggressively and systematically puts the entire public reliance on public research in food, agriculture and natural resources at risk. This will lead to a reduction in the number of institutions involved in conducting this research, a reduction in the sophistication of the research that is undertaken, and a risk to private enterprise in not having access to fundamental research findings that can fuel their innovation and translation of research into commercial application. The private sector will be more dependent on their own innovations, which will be more protected than information generated in the public domain, and will put the U.S. agriculture, food and natural resource industries at competitive disadvantage at the time that other developing and developed economies are increasing their public investment in food, agriculture and natural resource research.

One of the unique features of the research enterprises that undergird the tremendous success of the U.S. food, agriculture and natural resource industries is the partnership between private industry, ranging from individual farming and ranching operations to large corporate agribusiness and food marketing entities, the federal government through the U.S. Department of Agriculture, Food and Drug

Administration, Environmental Protection Agency, and Department of Interior, state governments, through their state agriculture commissions and investments in public universities, and those public universities. Non-government organizations such as commodity groups and professional and farming organizations have an interest in this as well.

Two key objectives have been identified for strategic action: 1) improving stewardship of facilities through adequate planning and funding of ongoing maintenance needs, and 2) investing in major renovations or new construction to replace aging and ineffective or unsafe or inadequate research facilities.

In order to address the improved stewardship, we recommend the following actions:

- a. Development and communication of facility stewardship best practices and standards for facility managers to use.
- b. Seek full funding of Indirect Costs from all granting agencies. This should include U.S. Department of Agriculture funding (AFRI, block grants) as well as private industry funding.
- c. Greater leeway in use of NIFA Capacity Funds for facility operating expenses

In order to address funding for major renovations or new construction of research facilities, we recommend the following actions:

- a. Create a grants program within NIFA to assist in funding major renovations or new construction to replace facilities created prior to 1990. The program should be designed so as to replace at least half of the facilities built prior to 1990 within the next 10 years. This represents approximately \$10 billion over 10 years.
  - i. The program should require documented matching funds from other partners, either state government, university, or private sector matching funds.
  - ii. The program should include two tiers, e.g. projects under \$5 million and projects greater than \$5 million in total costs, with different matching requirements for each category
  - iii. Proposals should be evaluated on their ability to address regional needs, to accommodate collaborations with other universities and states, and to enhance collaborations with USDA-ARS
  - iv. Proposals will be required to include a stewardship plan for ongoing maintenance of the new facility.

These two elements should be incorporated into planning for the 2018 Farm Bill.

Attendees: Simon Liu, ARS, Meryl Broussard, NIFA, Lou Swanson, CSU, Bill Payne, UNR, Alan Grant, VT, Susan Sumner, VT, Greg Bohach, Mississippi State, Walter Hill, Tuskegee, Mark Hussey, TAMU, Jack Payne, UFI, Clarence Watson, Arkansas, Ian Maw, APLU, Tom Coon, Oklahoma State

Later: added Mike Harrington, Eric Young, Parag Chitnis, NIFA

Simon – ARS status:

4,000+ buildings

14,000,000 sq. ft.

\$1.50 per sq. ft. in maintenance

How best to comingle federal agency and university funds (I guess this is in regards to facilities on campuses; typically, ARS owns the space they occupy if they pay for the construction of the facility. Is it possible to mix ownership/payment between ARS and university?)

Meryl –

Be clear about the state role (university), federal role (ARS), NIFA role in partnership

Agency would like to review all of authorities to help out, but need the case made

OMB models from NSF, NIH

Keep in mind regional and national needs

1890 partners' concern about existing facility program – NIFA – not touching it, off the table

1994 partners – expression of needed assistance in building facilities, but little support to date

Jack -

IDC needs to be part of the conversation – universities leave too much on the table

Now requiring state commodity groups to pay minimal (base) IDC – new, going into effect July 1, 2016 – 12%

Last year total of research expenditures was \$126 million, and \$39.9 million of that was from commodity group funding, which paid no IDC; his university is charging them 12% on those funds.

Citrus, Cattle, Timber, Farm Bureau, Fruits & Vegetables – discussion two days ago – commodity groups see it as double taxation; need to show that IDC go back to support their needs (equipment, facilities, etc.); means we can do more to serve them

USDA Block Grants – come to state dept. of agriculture; no IDC on projects, but state agency charges 10% on the pass-through funding; he has directed faculty to include 12% IDC on their proposals for block grant funding.

Need to be more creative in funding request – lines (in USDA Research title) that are target specific have funding included for infrastructure

Greg –

2018 Farm Bill – could be a part of this – need to include in the planning for next round

Bill –

In the west, a large percentage of state lands are managed by federal agencies – resurgent effort to sell small parts of land to invest in ag research infrastructure

Simon – regarding sale of federal land – agency doesn't have authority to sell their land – est. of land costs

Mark – when federal property is sold, it normally goes directly into the general revenue fund; takes action to make sure it gets applied to the cause of our interest;

Simon – licensing fees equal \$5 - \$6 million per year, but must go into science and technology fund, will take action to make that go more directly to support infrastructure.

Mark – biggest concerns: each state is unique; biggest mistake as leaders is that we don't appreciate value of fixed assets

A&M Deferred maintenance is in excess of \$1 billion

Tom – key issue is addressing the deferred maintenance issue, but we also have the legacy cost of replacement

Lou – towards end of the afternoon – how the states contribute will vary by state, but ultimately we need to frame this as a deferred maintenance practice.

Mark – perhaps we need to commit some of formula funds towards deferred maintenance;

Jack – how to embed in the farm bill? Need

Simon – B&F fund – construction of new buildings or major renovations of old buildings; Repair & Maintenance fund – for upkeep – much lower; most of work with Congress has been for B&F fund; this year is best yet – got \$212 million, but majority is to Athens to replace the Poultry Research Laboratory (\$113 million); was a 1930 building;

Two dimensions – 1) condition of the building – how bad is the building? 2) Priority of the research in that facility; only 122 buildings fit into the high need/high priority category; currently on their fourth group of buildings on their list

Clarence – how soon do ARS need to spend the money

Simon – usually is no-end date, but Congress, e.g. sequestration, can interrupt; does include fixtures, but not equipment (requires program dollars); some legacy problems with no-end date projects – still some lingering from era of ear marks; Broussard mentioned a facility project that was approved for funding during his time with the Regional Aquaculture Centers, but the state money (1:1 match was typical in ear-marks) languished – the building still hasn't been constructed, but technically, it's still on the USDA books as an obligation because it has no end-date.

Ian – need to have state investment as well

Meryl – earmarks required state matching funds (1:1);

Clarence – match idea is compelling – requires state to have skin in the game;

Greg – but that would require change in federal policy; e.g. ARS facilities; need for comingling funds –

Mark – comingling is being done – how to get it approved?

Ian – matching needs to be carved out and specific to the project –

Mark – could we have a project that is specifically deferred maintenance (or depreciation)?

Clarence – need change in policy

Mark – block grants – either they're IDC paying or not, should include the policy

Alan – do we have a sense of addressing the two issues?

Jack – huge misunderstanding of public officials and stakeholders; research has to pay for itself; need for our communications teams to clarify how tuition does NOT pay for research infrastructure;

Tom – need help of private industry

Meryl – consider the FFAR as a way of engaging the private sector

Mark – as they're raising money on the programmatic side, need them to understand need to fund ongoing maintenance

Tom – need a rule of thumb – so that PI understand if they're not getting full IDC, they have a debt to pay in some other way for their ability to conduct research.

## Outline

Jack – need our communications teams to address the statement of the case and what would happen if we don't address this?

We should focus on the options:

Mark – if communications/messaging is the issue, then we need BAC and global assistance on this;

Lou – tuition not being used for research is key; how is China financing their infrastructure investment? Interest on our national debt!

Greg – for CLP purposes – need a short statement to include in legislation;

Mark – what authority exists? Meryl – they have a team working on what authorities exist and are needed; 30% of ARS facilities are co-located on LGU campuses – want to be sure we don't have competition between ARS/LGU

Mark – if we were to achieve this by changing IDC – how likely is that;

Clarence – why is Ag different? Meryl – it's an issue with some members of Congress

Meryl – other agencies treat it differently as well – OSTP – looking at this now – ***Meryl – could you follow up on this with more information on the study going on in NIFA AND the OSTP study?***

Simon – scope of the issue – total deferred maintenance \$8.4 billion – if the fix is \$50 million/year, it won't come close to addressing the issue

Jack – Ag is treated differently (in grants, IDC)

Tom – other elements to include in points one and two of the outline – mention international investments in infrastructure; misperceptions about what funding is available for research; Jack - cheap food as percent of family budget; Alan - need for food safety – how is it declining; Lou - address this as food systems, not just agriculture; Bill – link of food system to health

Simon – Riley lecture – to promote a single message – ag research as a whole; need to tie this facility issue into that?

Susan – in looking at communications and marketing around this – need to mention to consider this as tradeoffs in other public investments – why invest in public research infrastructure vs. invest in bridges and roads – public sees it as either/or

Mark – end result – those of us with lots of facilities are going to have less facilities and moving people into other locations; regional structure will decline

Lou – three things – in part it's our fault, in part our friends' fault, and public/policy perceptions are off-track;

Why don't we show this on our financial statements? – show that we'll address this – accountability;  
Bob, Joe – how does OSU show this (fixed assets, depreciation) on our financial statements? How should we? How about the DASNR part of OSU Fixed Assets and depreciation? What are the best management practices? Is NACUBO the right resource for this information? Others at OSTP or other agencies – NIH, NSF?

Greg – this is a moving target – gap between what we're paying now and what we need – will get worse unless we start spending more AND replace outdated facilities.

Walter – national security is another issue in the case statement – food safety and food security is core to national security

Lou – did UCalifornia turn in data?

Report lists UC Berkeley, UC Davis, and UC Agriculture and Natural Resources; not sure what this leaves out – maybe just UC Riverside?

BREAK

Appeal – communications personnel to help with this; touch base with the Communications & marketing Committee – Lou is on it (the CMC) – Richard Reid is the chair

Tom – do we want a program that might be a grants program that requires matches?

Clarence – needs to be a non-federal match, not specific to university, state, industry, etc.

Mark – don't define where the match comes from – non-federal - look at language in the foundation?

Tom – specify a ratio?

Simon – asked the projects in a new facility to provide a 4% match towards construction; record keeping an issue as well – need to be explicit;

Clarence – suggests a 1:1 match;

Simon – industrial best practice – need to put aside 4% of total asset for maintenance

Mark – consider bringing EPSCoR into the program; not just USDA

Jack – concern about expensive buildings – 1:1 is a high level for a \$40 million building; donors have a significant role in moving these along

Greg – states with bonding authority for universities might have a leg up

Criteria – benefit to regional and national needs; level of match built by the host institution; linkage to USDA or other agencies;

Clarence – perhaps have a minimum match – 25% non-federal minimum

Alan – risk of having too few projects funded; Mark – perhaps put a \$5 million cap on the project, and this really forces it to be a renovation emphasis rather than new construction

Clarence – ask for a bigger authorization for AFRI and work to build on that – Mark, perhaps bring mandatory funding into the Farm Bill

Tom – future structure of land grant system? Will we have 76+ institutions in the future?

Meryl – how did we get here – need to be sure we're setting up to manage and be accountable for maintenance and depreciation; need to articulate best practices as guidance for universities and to help in making the case for new funding

Tom – how would we do that?

Mark – \$250 million leveraged 3:1 gets to \$1 billion– would make real inroads [Tom: consider \$250 million total appropriated over the 5 years of the farm bill]

Mark – make plans to tear down old facilities a necessary condition; Meryl – mandatory lines in the 2008 and 2014 Farm Bills, e.g. Specialty Crops Research Initiative, did not come from the LGU system – consider \$75 million mandatory (but that needs to come out of something else).

Clarence – need authorization first

Greg – idea of DM is getting more attention across government

Mark – need several ideas

- Grants program within USDA for DM – cap, mandatory funding, etc.

- Partnerships with other agencies as separate initiatives

- Best practices for accounting of depreciation, infrastructure, etc.

Mark – look at collaborative programs in 8 agencies – e.g. NIH, NSF [*Really need to look across agencies at this, especially those involved in research – NIH, NSF, DoD, DoE, OSTP*]

Greg – does NIH have an infrastructure program? Greg – yes, just got one at VT; Jack – NSF has one recently for renovation of marine labs; VT NIH grant was for renovating a swine facility for health research, and it required a university match

10 year plan to address this – bring it down from \$8.4 billion – how much of this do we want to reduce by? Reduce in half?

Mark – in order to change the momentum, need to increased spending on DM beyond whatever is spent on renovation or new space; need to take some square footage offline;

Mark – need to refine the numbers for the business case;

To reinforce the good business practices, require evidence that the institution has a plan in place for ongoing management that will maintain the space appropriately – make it specific to the grant-funded building

Another part of the strategy is to ask for full IDC

Walter – in Alabama, Auburn is building a new ag building; 1890 infrastructure funds have done projects at the 1890 institutions, but very little coordination between the 1862 and the 1890's

What lessons have we learned from the past that

Issue of avoiding dominance of 1862s –

Requirement for regional approach will help

Clarence – perhaps some portion of dm funds to be for multi-state projects

Bill – requirement for evidence of good dm practices need for continued capacity funds

Walter – when you look at the states, with criteria, those who are using best practices with instate partners should be favored in the selection process

Walter – should we include evidence of impact on global needs as making the case for funding?

Jack – food security is a key issue; framing it in the context of ensuring self-securing in other countries has merit; but hard to make this a case for

Lou – reframe Walter's comments – stakeholders assume we have global leadership, and want us to have that, but to ensure it, we need to invest in our infrastructure;

Eric – IDC increase – is there merit in getting a large group of colleges/universities to go down the path that Jack is doing at UFI – commodity groups are compelled by the u administrators being on the same page

Eric – on new construction grants program – building campaigns for churches – two cases \$2.5 m, \$7.5m; in each case the diocese loaned money interest free;

Mark – good idea, and if they fail to pay, they lose their capacity funds

Mark – require evidence that you will properly maintain

Mark – need our commodity groups to help on this

Tom – need private sector to help on this

Ian - Need ag commissioners on board as well

AHS Exec and CARET Exec will be discussing this in San Antonio

---

Tom – write up summary I provided before lunch, share with Directors across the system

Refine two pieces on strategic options

1. Ongoing maintenance
  - a. Best practices guidelines
  - b. Setting the goal of \$4.40/sq. ft.
  - c. Financing the goal
    - i. Full indirect rate
    - ii.
2. Federal investment in new facilities and major renovations
  - a. Grants program
  - b. Require non-federal match (minimum 25%); cash
  - c. Regional emphasis
  - d. Program priority emphasis
  - e. Focus on research, but integration is scored higher
  - f. Collaboration with ARS, other agencies
  - g. Stewardship plan – full IDC as a part of it.
  - h. Consider dividing into two pools – those under \$5 million and those over \$5 million; perhaps have a differential matching scale

Break into two groups: ongoing maintenance, new construction and major renovations

---

Notes from Ongoing Maintenance group: Eric Young, notetaker:

Sub-group members: Mark Hussey, Jack Payne, Alan Grant, Greg Bohach, Eric Young

1. Indirect cost recovery is the best and most appropriate method to obtain funds for on-going routine maintenance and repair, and to bring the funding for that purpose up to the \$4.40/sq ft national average.
  - a. Federal grants IDC
    - i. USDA agencies should have one IDC rate for all grants and contracts
    - ii. IDC rate should be full negotiated rate or a set amount based on average LGU rates (ex. 45%)
    - iii. USDA block grants to state agencies other than university (ex. state dept of agriculture) should carry full IDC for services rendered through the university.
    - iv. Funds should be available through AFRI for maintenance and repair, either as part of an increased IDC or as a separate funding mechanism.
    - v. Need to educate OMB and OSTP on the deferred maintenance issue and potential solutions.
    - vi. Should check IDC rate at federal agencies other than USDA, ex. DOE, DOD, HHS, EPA, etc.
    - vii. Request clarification from NIFA on using capacity funds for infrastructure maintenance, repair, and renovation.
    - viii. It's appropriate for a portion of capacity to be used to maintain infrastructure capacity, as well as intellectual capacity, if the director chooses to do so. Currently 75 – 95% of capacity funds are used for intellectual capacity (salaries).

- b. Commodity groups and industry should also pay IDC, at least enough to cover the cost charged by the university research or grants & contracts offices, or equivalent unit, depending on the organizational structure.
  - i. Many industry groups pay IDC now, so that may not require much change.
  - ii. State and national commodity groups generally do not pay any IDC with their research or Extension grants.
  - iii. Many university central administrations collect their portion of IDC on commodity grants that do not pay IDC, this results in loss of other IDC funds from the college or unit.
  - iv. Educating commodity boards about how IDC is used, why it's critical, how it benefits them, its relation to actual cost of research or Extension programs, etc. takes a careful detailed face-to-face conversation with the commodity leaders.
  - v. Faculty also need to be educated on the critical importance of IDC and "on board" with the idea to charge IDC for commodity grants.
  - vi. University of Florida IFAS has been working on this issue for 2-3 years and could share a great deal of experience and "lessons learned" with other institutions.
  - vii. Ideally, many or most agricultural colleges/units would agree to unite for the purpose of establishing IDC rates for key national commodity groups, and regionally for commodities primarily in one region. Need buy-in from AHS and AES & CES directors to accomplish this.

---

Notes from New Construction and Major Renovation group: Mike Harrington, notetaker:

Sub-group members: Walter Hill, Tom Coon, Lou Swanson, Bill Payne, Susan Sumner, Clarence Watson, Mike Harrington

There needs to be a strong statement from this committee endorsing/supporting the conclusions of the Sightlines Study

Some \$29 B is the current replacement value of the facilities reported. Of these 5/8 were constructed during the 1970s or before or some \$20 B values. These facilities are neither adequate for conducting 21<sup>st</sup> century science nor are they equipped with modern classrooms. Replacing half of the "old facilities" over a 10-year period would require approximately \$1 B annually.

Principles:

A stand-alone grants program (new authorization) with sufficient annual funding so as to address aging facilities by the end of 10 yr. program. USDA IDC allowed.

Grant size limited with a sliding matching requirement; for example, awards \$5 M or less would have a minimum of 25% match. Larger awards would have a smaller matching requirement.

Universities would submit proposals even if other units (e.g. ARS) were to be co-located.

Evidence of matching funds would be required at time of application.

The proposal must contain a stewardship plan to maintaining the facility.

Priority given to meeting regional and multistate needs

Primary focus would be on research facilities but recognize that classrooms and office space to graduate students and post docs would be needed

---

Tom's notes from the new construction group:

Walter – are we talking about only research facilities or full facilities?

Susan – perhaps the state match covers the teaching, etc. and the grant is for the research space

Walter – 1890's program – minimum of 20% required for each of the three missions

Integrated missions is preferred, but research must be the primary focus of the facility

\$8.4 billion in deferred maintenance

\$29 billion replacement value

5/8 of the TDM is pre-1975 (\$1.5 billion + \$3.6 billion); to address this, try to knock this in half in 10 years so 5/8 of \$29 b is about \$20 b, and half of that is \$10 b, so ask for \$1 b per year for 10 years; \$10 billion over 10 years is small in comparison with the annual appropriation to NIH or the funding of one fighter/bomber

Treat as a new authorization in research title, but not a part of AFRI nor a part of Hatch

Timing of match – in hand at time of proposal vs. contingent on obtaining within a time frame

Replacement or repurposing

Producing a wealth of STEM talent with no place to go with that talent.

---

Groups reconvene:

Ongoing Maintenance group

IDC issues dominated

- USDA authority to collect full

- Block grants

- Commodity groups

- Coordinate and achieve agreement across state lines so commodity groups accept that it's not different from state to state

- Coding Extension the same as Research in terms of administrative overhead

- Consider making DM as part of AFRI budgets

Funding from non USDA agencies – be sure to work to get full IDC from them; also for new facilities or renovation/repurposing; Parag – NSF has the authority; go in with other agencies – part of the broader DM concerns

Lou – we should state “here’s what we need” vs. “here’s what we want”

Walter – consider three or four alternatives on a one-pager to answer the question of how much does it cost? Consider having a focus group of staffers respond to “what really could work”?

---

