Optimizing Grant Development and Submission II

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Corey Washington
CORD 4/10/2014
Outline

- MSU grant performance
- Colleges pre- and post-award practices
- Faculty survey
- Case studies
- Gold standard
Research Methods and Goals (1/2)

• This report is based on the faculty research survey conducted in the Spring of 2014, discussions with research deans and research administrators in the 10 largest colleges on campus, and an analysis of data from usaspending.gov, NSF’s Higher Education Research and Development, and MSU contract and grants database.

• We report aggregate grant expenditures by funding agencies. With the exception of Department of Education, we were unable to determine the total number of FTEs working in each funded area for each university and so unable to report funding per FTE.

• Nine research deans described activities that we deemed distinctive enough to warrant the inclusion in this report. We hope to expand our study to the remaining colleges in the next version of this annual report.
Research Methods and Goals (2/2)

- Slides on particular colleges mention features of their grant research development programs that struck us as worth setting out to show the range of activities across campus. Their inclusion within a particular slide does not suggest that the programs are absent from other colleges or that they exhaust the efforts within particular colleges.

- It is our goal to make information about our grant performance widely available across campus to encourage discussion on efforts to improve MSU’s standing as a national and international research university.

- We welcome feedback from investigators and administrators as to the content of this report.
Performance = F (People, Processes)

...  

Performance

How does MSU stack up?
MSU is Underperforming Relative to Big Ten Peers in Total Grant Dollars

FY2012

Plots show aggregate expenditures rather than expenditures per FTE.

Total Grant Funding from NIH, NSF, DOD, DOE, DOEd

Source: HERD *

*Higher Education Research and Development - NSF
National Institute of Health
Total Funding FY2012

Source: NIH

Source: HERD
Department of Defense
Total Funding Grants and Contracts FY2012

Source: USAspending.gov

Source: HERD

*Due to Applied Research Laboratory (ARL)
Department of Energy
Total Funding Grants and Contracts FY2012

Source: USAspending.gov

Source: HERD

*Wisconsin is the lead institution for Great Lakes BioEnergy Research Center (but MSU receives half of the funds)
Other (HERD)
FY2012

$Millions

Ohio State University
University of Wisconsin
Michigan State University
Pennsylvania State University
Purdue University
University of Illinois
University of Nebraska
University of Minnesota
University of Iowa
Northwestern University
Indiana University
Department of Education

Total Funding Grants, Direct Payments, Loans and Contracts FY2012

83 – size of department according to academic analytics

* = no data
MSU Colleges Pre/Post Award

Processes
<table>
<thead>
<tr>
<th>College</th>
<th># Fulltime Admins*</th>
<th># Proposals (CGA Database)</th>
<th>Admin: Proposal Ratio++</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGR</td>
<td>~4</td>
<td>488</td>
<td>1:122</td>
</tr>
<tr>
<td>CNS</td>
<td>~3</td>
<td>589</td>
<td>1:196</td>
</tr>
<tr>
<td>CVM</td>
<td>~2</td>
<td>184</td>
<td>1:92</td>
</tr>
<tr>
<td>Education</td>
<td>~2</td>
<td>141</td>
<td>1:70</td>
</tr>
<tr>
<td>Arts and Letters</td>
<td>~1</td>
<td>83</td>
<td>1:83</td>
</tr>
<tr>
<td>Nursing</td>
<td>~1</td>
<td>40</td>
<td>1:40</td>
</tr>
<tr>
<td>CAS</td>
<td>~1*</td>
<td>98</td>
<td>1:49</td>
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<tr>
<td>AgBio (CANR)</td>
<td>~3**</td>
<td>1,120</td>
<td>1:373</td>
</tr>
<tr>
<td>CSS</td>
<td>~0***</td>
<td>385</td>
<td>-</td>
</tr>
<tr>
<td>CHM</td>
<td>~0</td>
<td>285</td>
<td>-</td>
</tr>
<tr>
<td>COM</td>
<td>~0</td>
<td>174</td>
<td>-</td>
</tr>
</tbody>
</table>

* In some units admins handle pre and post award administration.
++ The wide variety in ratios reflects in part the fact that proposals to different funding agencies, require differing levels of preparation.
* 1 FT, 1 super floater
** 3 FT admins, 1 halftime text editor, 2-3 post award floaters, 1 halftime GA CANR
***Not done at the college level, handled by units.
Distinctive Features of Pre-award Offices Across Campus

(not designed to provide and exhaustive list of services)
Engineering

- Regular newsletter with funding opportunities
- Faculty fill out form expressing interest in a particular grant
- Information sharing between post- and pre-award about how money was spent in the past:
  - e.g. Listed # of grad students proposed on budget vs. actually needed
- Admins should not spend 100% of time on grant admin to limit burnout
- Proposed: hiring retired/near retired successful faculty to review proposals
- High level of faculty satisfaction
Natural Science

- Faculty often on mailing list from agencies
  - Office doesn’t typically provide RFP’s or attempt to match faculty with grant funding opportunities

- Faculty can’t keep up with the complexity of funding agency requirements
  - Dedicated pre-award staff stay current on changes in funding agency requirements and act as a resource to guide

- Not enough trained research admins
  - RAs need better understanding of how to identify which grants are relevant to which faculty members
  - Proposed: RA internship program, where post-college workers rotate through research admin offices in depts., colleges and central admin, can be hired at end of year

- Centralization of services at the college level allows admins to work effectively as a team
  - all use same email for pre/post-award

- High level of faculty satisfaction
Communication Arts and Sciences

- Created liaison position for troubleshooting relationship between pre- and post-award, e.g. identifying budget items that cannot be easily spent if the award is successful

- Proposed:
  - Integrate development activities with research on campus
  - 2 month deadline before due date to provide enough time for PO feedback

- Office doesn’t compile faculty biosketches but would if asked
Social Science

- Pre- and post-award research administration is the responsibility of each academic unit and there is no plan to add an FTE research administrator housed in the Deans’ Office.
- Faculty sometimes use OSP or CNS/EGR (if there is collaboration) for pre-award services.
- CSS Deans’ Office provides limited pre-award (via one on-call staff) to support select assistant professors.
Arts and Letters

- Grants not currently central to the mission of many departments in college
  - Encouraging more grant writing may distort research activity
- Started two internal research grant programs (Research Award and External Connections programs) to provide seed funding and encourage faculty to submit external proposals
- Encourages grant seeking where it is consistent with research priorities
- Regular newsletter, admin tracks faculty interest in previously identified opportunities
- Targeted funding source meetings with individual faculty, ~15-20 annually
- Benefits from grant opportunities sent out from VPRGS
AgBio Research

- Support faculty in 27 departments and centers in 7 different colleges
- 13 departments in CANR: 10 have support, 4 of which have “great support”, the remaining “don’t have much, if any”
- Spread all over campus and the state
- Expanding pre-award capacity
- New office, just getting started
- Pre-award office keeps in constant contact with new faculty, who as a result, often submit ahead of schedule
- Co-location of researchers and admins in same building facilitates communication, they can stop by anytime, and do so
- OSP has short flexible deadline, results in pre-award office feeling unable to enforce strict deadlines on its own
- Deans office opposed to deadlines
Education

- Send newsletters at least bimonthly with increasing specificity as deadlines approach
- Large variation in available funding
  - STEM is doing well
  - Literacy can increase
  - Opportunities in Autism, Economics of Education and KIN.
- If funds were made available to use for items that could not be included in a grant budget, e.g. to pay for food for teachers or students involved in a project, then faculty might be incentivized to submit more grant proposals.
- Collaborative tools desired: lack of cloud computing is a barrier. Don’t want to house large video data store in their building’s servers.
Nursing

- Funded 50% of a CSTAT statistician to assist faculty with pre-award. Person lacked experience and did not communicate easily with faculty.

- Rigorous deadlines
  - No compliance problems after one grant is prevented from going out.

- College funds external peer review, grant editing, and travel for networking with POs and potential collaborators.

- Active efforts to develop network relationships with colleagues in investigative fields in order to foster creative development and identify potential external reviewers.
## Nursing Deadlines

### Estimated Proposal Timeline

<table>
<thead>
<tr>
<th>Step</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribute for internal review</td>
<td>12 weeks prior to due date</td>
</tr>
<tr>
<td>Start budget</td>
<td>11 weeks prior to due date</td>
</tr>
<tr>
<td>Receive internal review feedback</td>
<td>10 weeks prior to due date</td>
</tr>
<tr>
<td>Distribute for external review</td>
<td>8 weeks prior to due date</td>
</tr>
<tr>
<td>Update budget; contact subcontracts</td>
<td>7 weeks prior to due date</td>
</tr>
<tr>
<td>Receive external review feedback</td>
<td>6 weeks prior to due date</td>
</tr>
<tr>
<td>Finalize subcontract budgets (request final documents)</td>
<td>5 weeks prior to due date</td>
</tr>
<tr>
<td>Submit to editor</td>
<td>4 weeks prior to due date</td>
</tr>
<tr>
<td>Finalize budget and justification</td>
<td>3 weeks prior to due date</td>
</tr>
<tr>
<td>Finalize application (e.g. proposal, abstract narrative, human subjects, target enrollment table, and data safety plan)</td>
<td>2 weeks prior to due date</td>
</tr>
<tr>
<td>Submit to NRC for processing</td>
<td>2 weeks prior to due date</td>
</tr>
<tr>
<td>Submit to OSP</td>
<td>1 week prior to due date</td>
</tr>
</tbody>
</table>
Survey Results Spring 2014

~24% responded (406 of the 1,717 tenure stream faculty)
~70% of the faculty were grant funded
~66% of those with funding had 1-2 grants
Pre-award Support

Faculty have a more positive attitude toward local support than central support for pre-award services

- Your department: 40%
- Your college: 49%
- Other colleges: 4%
- Central administration (OSP or VPRGS): 7%

$n = 406$
Faculty have a More Positive Attitude Toward Local Support Than Central Support for Pre-award Services

<table>
<thead>
<tr>
<th></th>
<th>Your Department</th>
<th>Your College</th>
<th>Other Colleges</th>
<th>Central Administration (OSP or VPRGS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>33%</td>
<td>33%</td>
<td>24%</td>
<td>32%</td>
</tr>
<tr>
<td>Good</td>
<td>24%</td>
<td>22%</td>
<td>27%</td>
<td>25%</td>
</tr>
<tr>
<td>OK</td>
<td>13%</td>
<td>13%</td>
<td>14%</td>
<td>15%</td>
</tr>
<tr>
<td>Poor</td>
<td>10%</td>
<td>11%</td>
<td>8%</td>
<td>15%</td>
</tr>
<tr>
<td>Bad</td>
<td>10%</td>
<td>10%</td>
<td>15%</td>
<td>12%</td>
</tr>
</tbody>
</table>

n = 406
Faculty Prefer Local Support to More Centralized Support for Post-award Services*

**In the original survey we asked about attitudes toward central (OSP and VPRGS) for both pre- and post-award. However, central post-award administration is conducted by CGA rather than OSP. We regret the inaccuracy of terminology.**
Positive Experience with PO Visits (1/2)

Little awareness of support for visiting program officers in DC
- Only ~11% faculty are aware VPRGS will fund 50% of the cost of a DC visit
Positive Experience with PO Visits (2/2)

~30% faculty have visited DC in the past 5yrs

Of those who visited
- ~88% found experience good or excellent
- ~1% found poor
- 0% found it bad
Interdisciplinary

- Roughly half of respondents have an interdisciplinary grant
- High proportions of faculty have collaborated on interdisciplinary grants with another...

![Bar chart showing distribution of interdisciplinary collaborations by institution type]

- Department: 75%
- College: 69%
- University: 76%
- Other (please specify): 21%

n = 379
Interdisciplinary Grants

- 36% are aware of coffee breaks, though only 28% of those aware have attended
- 17% are aware of the wine and cheese events with 57% of those aware having attended
- Attendees of both found these events...

![Bar chart showing responses to usefulness of events]

n = 59
Lack of Time is Primary Reason Faculty Say They Do Not Apply for More Grants

- Insufficient knowledge of available university resources: 14%
- Insufficient identification of collaborators: 14%
- Insufficient opportunities: 17%
- Insufficient lab personnel: 19%
- Other (please specify): 29%
- Insufficient administrative help: 34%
- Insufficient funds to generate preliminary data: 34%
- Insufficient time: 79%
No Strong Preference Among Incentives for Increasing Submissions

Proportion of IDC returned to research account
- 25%
- 41%
- 33%

Lump sum funds returned to researcher to be used at researcher's discretion
- 40%
- 44%
- 17%

Course reduction
- 35%
- 15%
- 50%

n = 406
Peer Review and Editing Support (1/3)

Strong majority of those who have had grants peer reviewed or edited found it useful or very useful

- Internally (by a faculty member at MSU): 39% Very useful, 48% Useful, 9% Neither helpful nor unhelpful, 2% Not useful, 2% Not at all useful
- Externally (by faculty at other institutions): 46% Very useful, 45% Useful, 6% Neither helpful nor unhelpful, 2% Not useful, 2% Not at all useful
- Externally (by professional editors): 33% Very useful, 32% Useful, 16% Neither helpful nor unhelpful, 7% Not useful, 12% Not at all useful

n=290, n=189, n=75
Of those who have not had experience with internal/external review, most expect to find it useful or very useful.
Peer Review and Editing Support (3/3)

- Overwhelmingly (82%) faculty willing to review proposals by others in their department
  - Only 11% wouldn’t review under any circumstance.
- Incentives might encourage even greater willingness to review peer proposals
Faculty Learn About Grant Opportunities from a Range of Sources

Awareness of SciVal is low

# of times selected

- Colleagues in your field: 229
- Grants.gov: 158
- Your college: 146
- Other (please specify): 138
- Your Department: 120
- University: 61
- Foundation center: 43
- VPRGS: 31
- SciVal: 4

n = 379
VPRGS Needs Better Marketing

Only 23% of respondents were aware that VPRGS provides grant editing support for larger center grant proposals.
Increased Research and Administrative Support are Most Highly Preferred Options for Raising Productivity

Options for increasing faculty productivity

- Research assistants: 105, 61, 39
- Administrative support: 99, 76, 75
- Contracted one-on-one grant editing: 42, 37, 44
- Better information on available funding opportunities: 33, 35, 56
- Internal peer review of grant proposals: 29, 48, 45
- External review of grant proposals: 42, 31, 42
- Mentoring: 26, 36, 20
- Meeting program officers in D.C.: 18, 24, 20
- Statistical and bioinformatic support: 12, 30, 33

n = 379
### Alternative Analyses of Incentives

#### Weighted: $1^{st} = x3$, $2^{nd} = x2$, $3^{rd} = 1$

<table>
<thead>
<tr>
<th>Service</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research assistants</td>
<td>315</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative support</td>
<td>297</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contracted one-on-one grant editing</td>
<td>152</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Better information on available funding opportunities</td>
<td>126</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal peer review of grant proposals</td>
<td>74</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>External review of grant proposals</td>
<td>99</td>
<td>70</td>
<td>56</td>
</tr>
<tr>
<td>Mentoring</td>
<td>63</td>
<td>84</td>
<td>31</td>
</tr>
<tr>
<td>Meeting program officers in D.C.</td>
<td>60</td>
<td>52</td>
<td>36</td>
</tr>
<tr>
<td>Statistical and bioinformatic support</td>
<td>54</td>
<td>48</td>
<td>20</td>
</tr>
</tbody>
</table>

#### Sum across all rankings

<table>
<thead>
<tr>
<th>Service</th>
<th># of times selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative support</td>
<td>524</td>
</tr>
<tr>
<td>Research assistants</td>
<td>476</td>
</tr>
<tr>
<td>Contracted one-on-one grant editing</td>
<td>244</td>
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<tr>
<td>Internal peer review of grant proposals</td>
<td>228</td>
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<tr>
<td>Better information on available funding opportunities</td>
<td>225</td>
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<tr>
<td>External review of grant proposals</td>
<td>178</td>
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<tr>
<td>Mentoring</td>
<td>148</td>
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<tr>
<td>Statistical and bioinformatic support</td>
<td>129</td>
</tr>
<tr>
<td>Meeting program officers in D.C.</td>
<td>122</td>
</tr>
</tbody>
</table>
“We need longer lead time to submit better proposals. We should be able to plan ahead for the ones we know will happen every year or every other year.”
– engineering

“Weakest feature of the program is relationships with POs” - com arts
“...your present offer of editorial assistance will bring in proposals at various stages of development. To ask an external editor to review such a heterogeneous mixture is to request the near impossible...consider requiring that the dean’s offices prescreen proposals to be sure that they are at the stage at which a professional editor can help.” - com
Moving Forward

Case Studies
Gold Standard
Case Studies

...
Case Study 1: University of Pittsburg Department of Psychiatry
Leads all psychiatry departments in the country in number of grants and total grant dollars

Mandatory system
- Grant must be reviewed by 3 other members of the department (often suggested by applicant)
- Must be approved by a grant committee before it can be submitted to funders
- Review process typically takes 7 days
- Committee may say a) grant is not ready for submission, b) can be submitted after addressing comments, c) ready to submit as is

- The grant must be submitted to the grants office 10-14 days before the submission deadline.
- Overall grant must be handed to the reviewers about 3 weeks – 1 month before the final due date
- Pitt psychiatry leads the country in number of grants and total grant $$ for all psychiatry departments

“I think the system is fantastic. It gives us a better chance of getting grants. That’s what we live on, after all.” Etienne Sibille, Associate Professor
Case Study 2: Cleveland Clinic Lerner Research Institute (LRI)

- Mandatory internal peer review
  - Each proposal must be reviewed by 3 other members of the institute
  - No requirement that comments be addressed before the grant is submitted

- The 172 Researchers at the LRI brought in $163M in Funding ($106 Federal) in 2013

- “Perhaps a few try to game the system, but nearly everyone else really believes in the program because it makes grants better.” Bob Silverman (MSU class of ‘70)
Gold Standard
Gold Standard (1/4)
Incentives

- **To submit more proposals**
  - Increasing IDC return with number of grants
  - Cost sharing/small fund supporting proposal submission
  - Course reduction for most productive faculty.

- **To improve quality of proposals**
  - Break up SPG into program for smaller grants to develop preliminary data
  - Make willingness to offer and receive peer review a condition for internal funding
  - Offer free grant editing only for proposals that undergo internal peer review
Gold Standard (2/4)
Identifying Opportunities

- Networking
  - Visits to D.C. to meet with program officers (formerly EGR)
  - Visits to conferences for identifying external peer reviewers and collaborators (Nursing)
  - Visits to MSU by program officers

- More effective methods for identifying and communicating funding opportunities
  - Send newsletters at least bimonthly with increasing specificity as deadlines approach (Ed)
  - Targeted funding source meetings with individual faculty (CAL)
  - Faculty fill out online form expressing interest in a particular grant (EGR)
  - Track faculty interest in previously identified opportunities (CAL)
  - Better engagement with foundations
  - Integrate development activities with research on campus (Com A)
Gold Standard (3/4)
Preparation

- **Hard, extended, and structured deadlines**
  - Constant contact between faculty and the pre-award office

- **Scientific Review**
  - Internal review by departmental peers and/or retired/near retired faculty
  - Seminars where grants proposals are presented
  - Potential external review by PO, and peers

- **Grantsmanship support**
  - Seminars on grant writing
  - Webinars with cohorts developing grants
  - Contracted grant editing
Gold Standard (4/4)
Administration

- **Free faculty from “administrivia”**
  - Have admins work in a team, share email
  - All pre- and post-award contacts from across campus on a common website
  - Floater positions able to work with colleges on as needed basis
  - Ensure variety of work to reduce burnout
  - Priority pre-award to support assistant professors
  - RA internship program, where post-college workers rotate through research admin offices in depts., colleges and central admin, can be hired at end of year

- **Improved communication**
  - Liaison position between pre- and post-award to trouble shoot and provide feedback on spending history
  - Regular rotation of personnel between colleges and central administration to foster collaboration