



National Organization of Research Development Professionals

# Using Business Development Funnel to Stimulate Increases in Research Funding: An Update

Sandra Evans

[syevans@ncat.edu](mailto:syevans@ncat.edu)

Paul Tuttle

[petuttle@ncat.edu](mailto:petuttle@ncat.edu)

North Carolina Agricultural and Technical  
State University



# Agenda

- Background/rationale
- Implementation
- Where are we now?



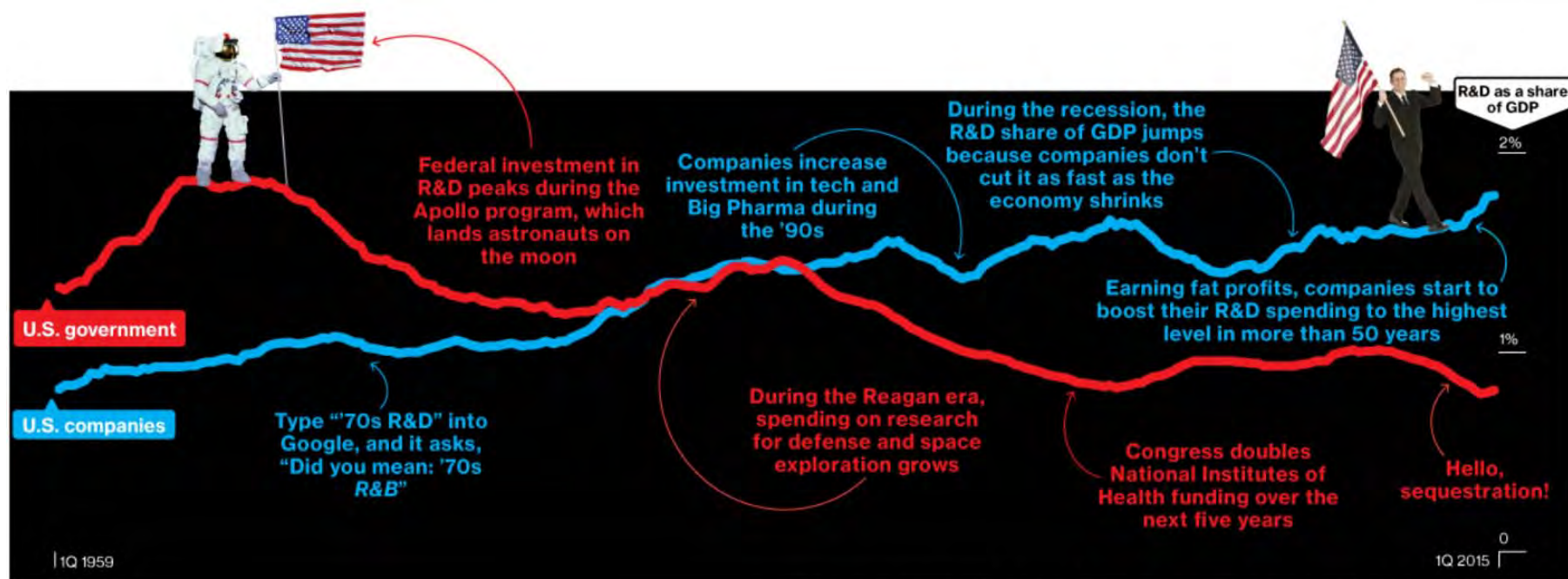
# Background/rationale

- Environmental factors
- Institutional factors
- Faculty development needs



# Environmental factors

- Federal R&D budgets have declined since 2010
- Competition for Federal grants has increased since 2010



COMPANIES LISTED REPORTED AT LEAST \$1 BILLION IN ANNUAL REVENUE; R&D - TO - REVENUE FIGURES ARE FOR THE TRAILING 12-MONTH PERIOD; DATA: COMPILED BY BLOOMBERG; FROM LEFT: NASA; ISTOCK/GETTY



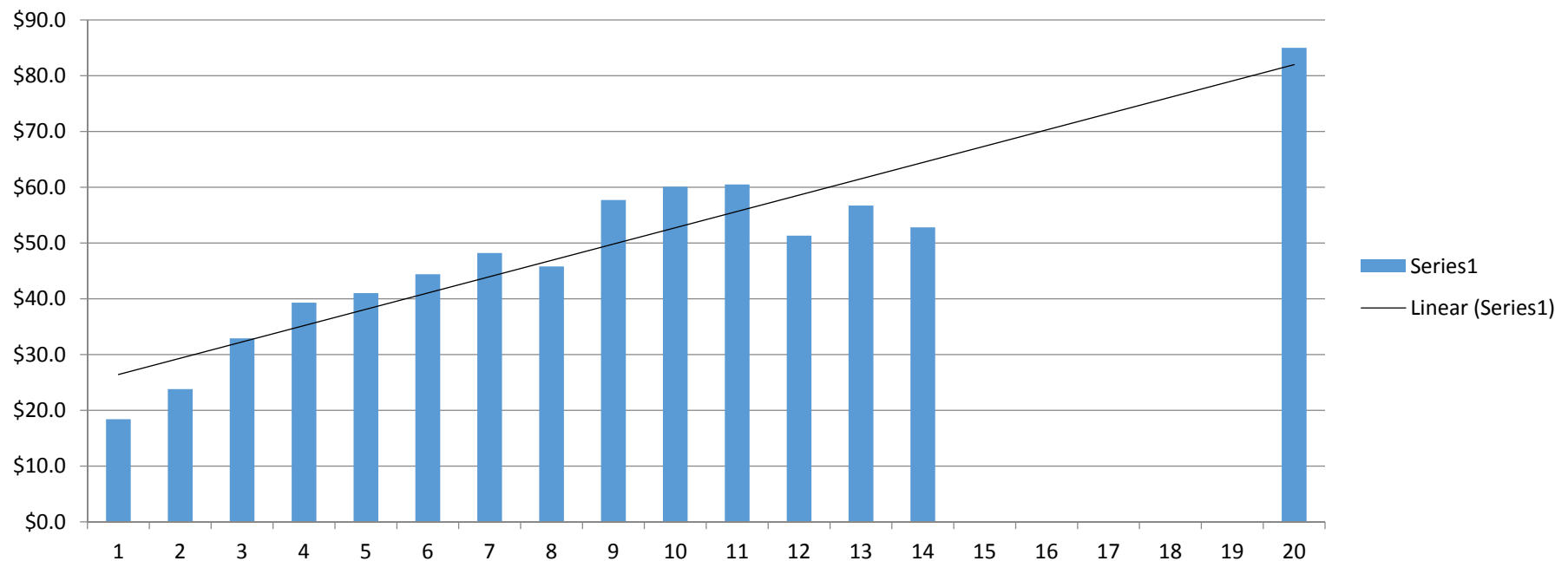


# Institutional factors

- *A&T Preeminence 2020* Strategic Plan
  - Objective = \$85M/year in awards
- Institutional support is flat and may decrease
- Teaching loads have increased

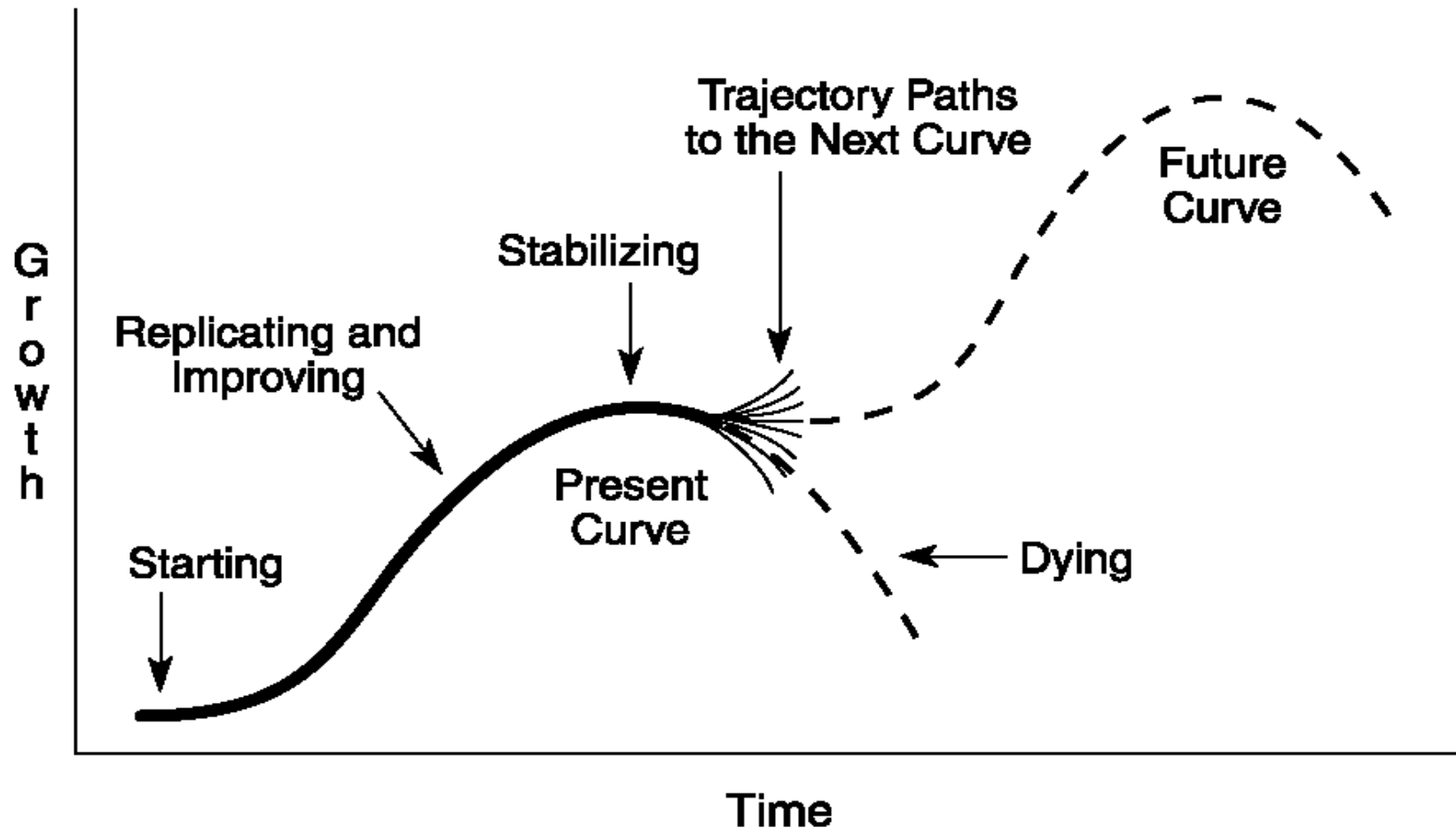


# \$85M awards goal = linear growth trend



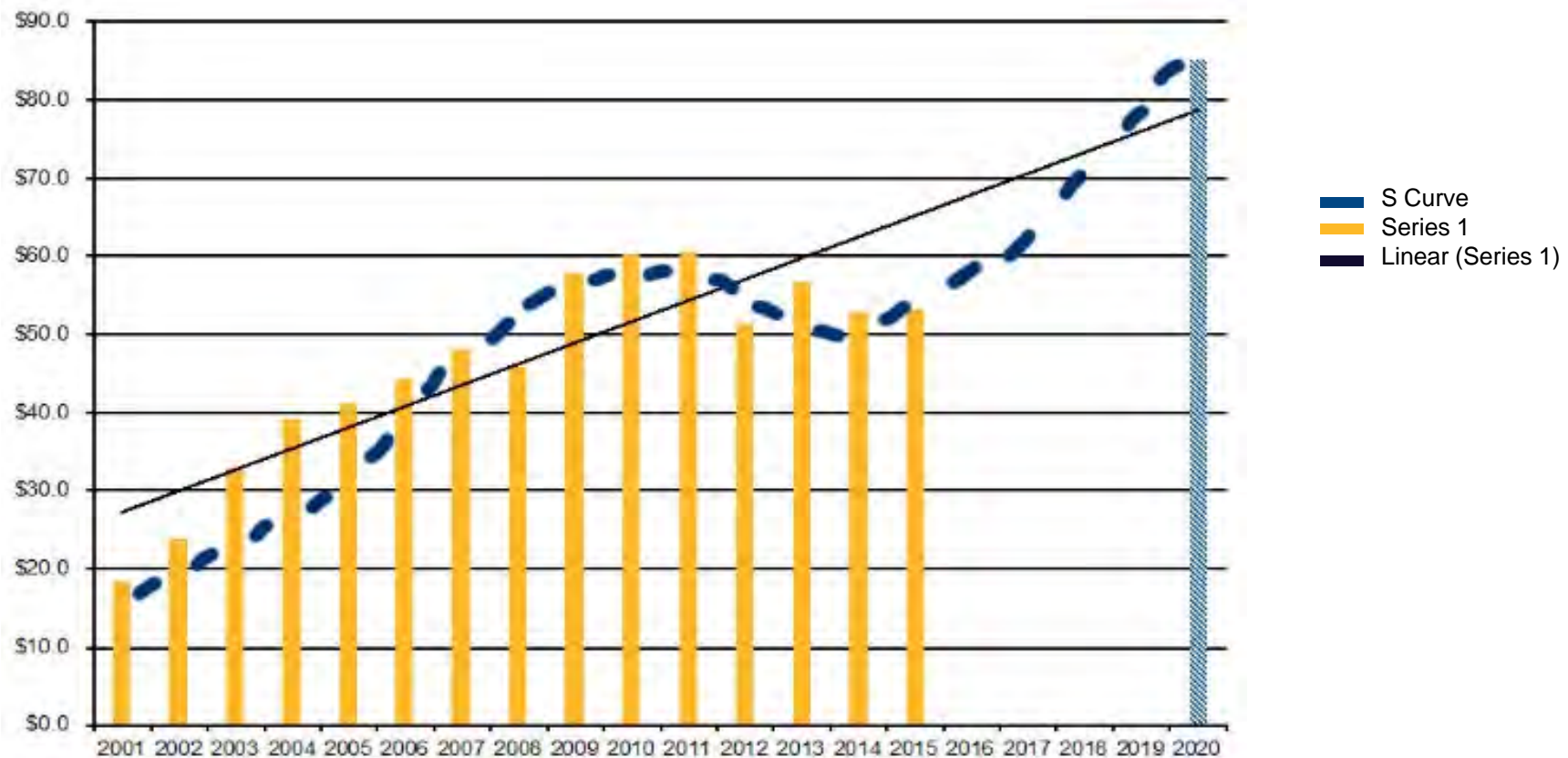


# Classic S curve for small business growth





# S-curve growth = more realistic







# We maxed out on the old business model and had to break out a new one!

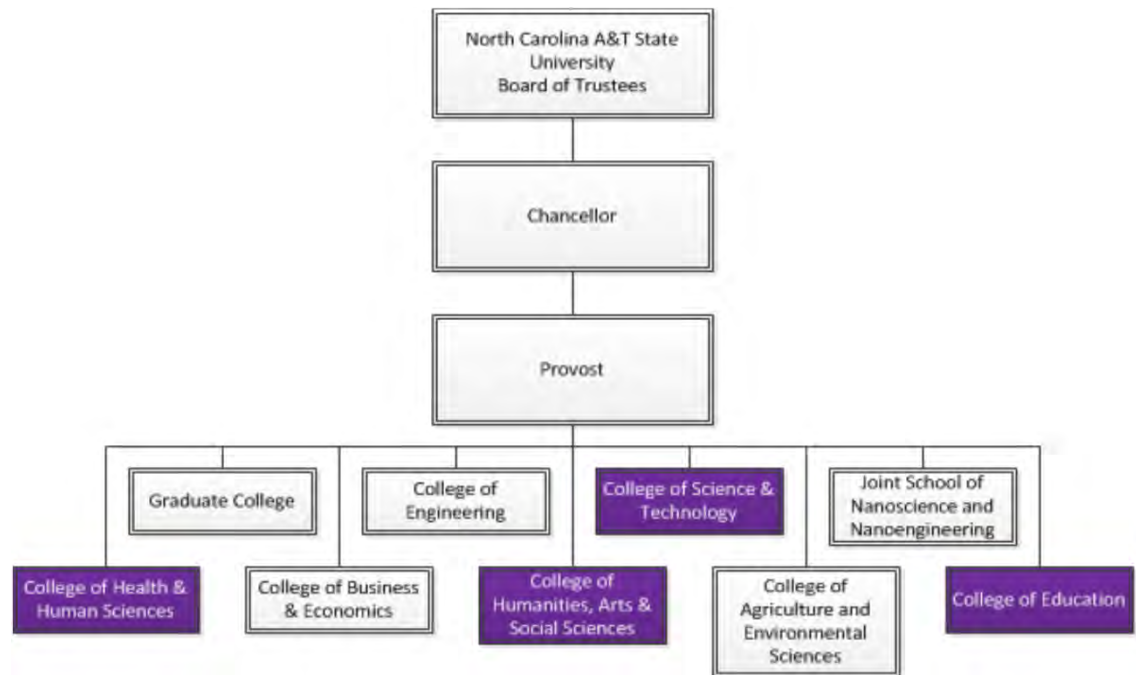
Requires intentional, deliberate strategies:

- Reorganize academic units to better motivate and support research
- Reinforce RD with strategic hires
- Diversify the funding portfolio – increase \$s from private sector, foundations and more agencies
- Proactively pursue Federal funding – cannot wait passively for opportunity announcements
- **Develop business development (funding opportunities) funnels**



# Strategy – A&T's academic restructuring

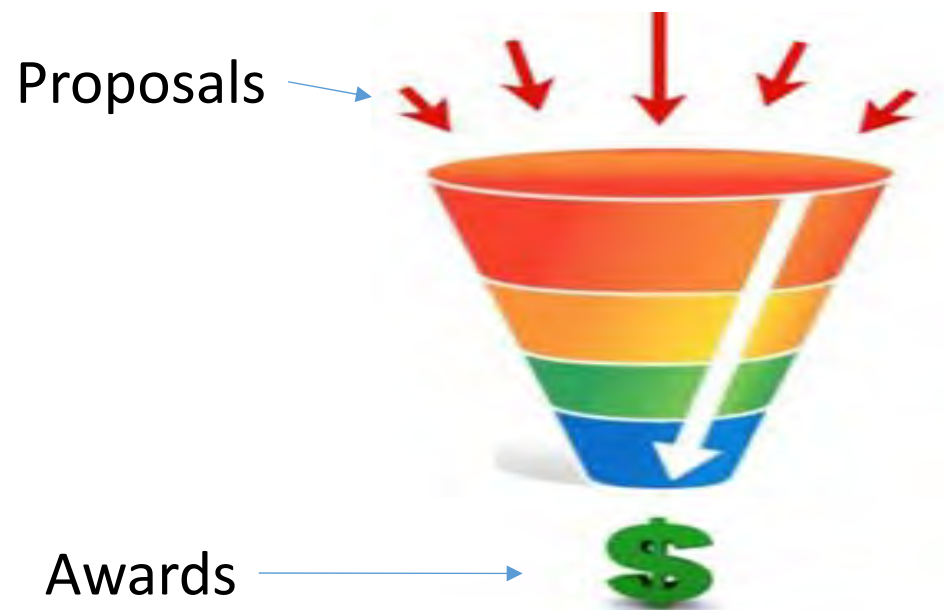
- Challenge
  - Managing change
- Benefits
  - Faculty are now grouped more appropriately
  - All colleges now have at least one PhD program





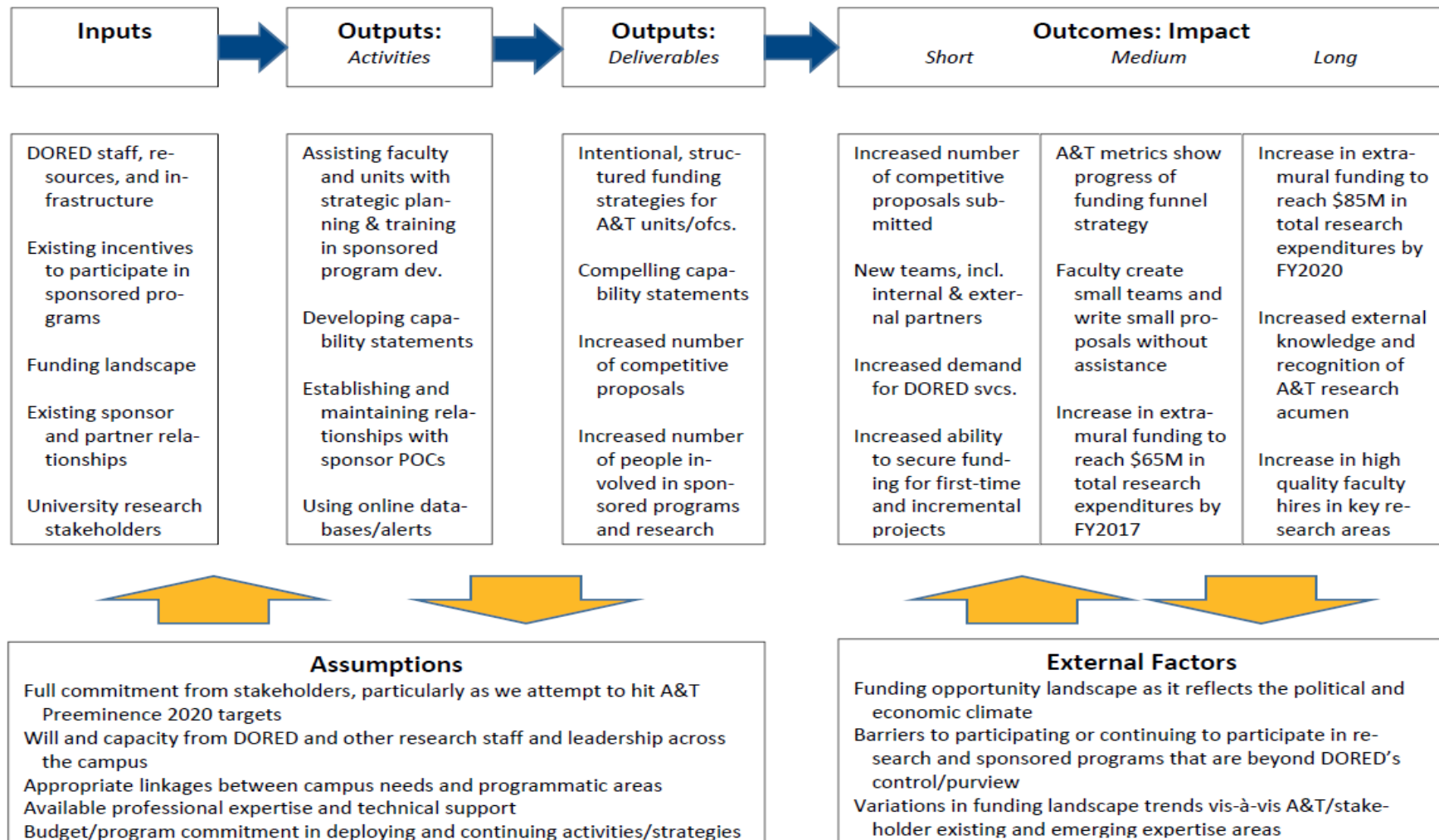
# Strategy – Develop funding funnels

## Funding Funnel Concept





## Logic Model for Creating and Maintaining NC A&T Funding Funnels



Logic model format source: Tina Edgerly Campbell's NORDP 2014 preconference workshop materials





# Developing funding funnels

## Work with college leadership to:

- Identify core funding with a very high probability of funding and ensure submission of competitive proposals
- Identify recurring funding opportunities with the highest hit rates—anticipate these and start proposal preparation
- Identify other recurring growth opportunities—strengthen relationships with program officers
- Identify other growth opportunities—presidential initiatives, DoD IDIQ contracts, private and corporate foundations, industry





# Developing funding funnels

## Work with faculty to:

- Develop personal strategic research plans to help clarify and guide engagement
- Template
  - Current situation
  - Emerging or future directions
  - Professional goals
- Endpoint
  - Living document
  - Narrative and timeline

Gilmore, Jason. Writing the research plan for your academic job application. Retrieved from <http://www.acs.org/content/acs/en/education/students/graduate/writing-the-research-plan-for-your-academic-job-application.html>

Pfirman, S., Bell, R.E., Culligan, P.J., Balsam, P., & Laird, J.D. (2008). Maximizing productivity and recognition, part 3: developing a research plan. Science Careers. Retrieved from <http://sciencecareers.sciencemag.org>



# Implementation at A&T

- Campus roll-out
  - Presentations to colleges and departments
  - Follow-ups with individual faculty
  - Handling the inevitable pushback
- Individual strategic research funding plans





|        | Assistant Professor  | Associate Professor   | Full Professor  |
|--------|--|---|---|
| Y<br>I | <p><u>Apply for:</u> intramural funding, NIH K99-R00, K01, R03 or R21, &lt;\$300K NSF, CAREER, and smaller federal grants, ESI foundation, corporate funding</p> <p><u>Work on:</u> collecting preliminary data, contact foundation, corporate relations, identify mentoring team, participate as co-investigator on a major award, limit committee and "service" work to focus on establishing research portfolio, identify timeline for transition from early funding to first R01, publications, develop an "idea bank" of research questions</p> | <p><u>Apply for:</u> NIH R21, first or continuing R01, Foundation grants focusing on transitions, funding from national professional associations</p> <p><u>Work on:</u> PI grants with Co-Is from other disciplines, direct a graduate program, direct a Center or Institute, build energy around ideas for P01 type grants or NSF center grants, high impact publications, develop an "idea bank" of research questions</p> | <p><u>Apply for:</u> Continuing R01, P01, high-risk foundation grants like Simons or Keck, corporate funding such as 3M, Microsoft, Samsung</p> <p><u>Work on:</u> Patents, solicit your VPR, Dean and Provost to kick in for funds to develop a team to seek center-type funding, which requires collaboration such as co-authorship, co-teaching, and/or co-funding, high impact peer review publications, develop an "idea bank" of research questions, mentor an ESI, develop a personal website, twitter</p> |
| Y<br>3 | <p><u>Apply for:</u> intramural funding, transitions from mentored awards to independent awards, corporate and foundation prospects gathered from corporate and foundation relations, if ready, first R01, NSF awards between \$300-\$400K</p> <p><u>Work on:</u> leverage preliminary data gathered, high impact co-authorship with someone outside your discipline</p>   | <p><u>Apply for:</u> NIH R21, first or continuing R01, foundation grants focusing on transitions, funding from national professional associations</p> <p><u>Work on:</u> PI grants with Co-Is from other disciplines, direct a graduate program, direct a Center or Institute, build energy around ideas for P01 type grants or NSF center grants, develop a personal website, twitter</p>                                    | <p><u>Apply for:</u> Continuing R01, P01, high-risk foundation grants like Simons or Keck, corporate funding</p> <p><u>Work on:</u> Finalize patents and copyrights, build international collaborations, write first center award, conduct needs assessment if necessary, develop partnership with business school for business plans (necessary for successful center and program awards), identify excellent evaluators</p>   |
| Y<br>5 | <p><u>Apply for:</u> "New Investigator" R01, R21 for additional research ideas, foundation "transitions" awards, professional society awards, PI grants with Co-Is from other disciplines, direct a graduate program, direct a Center or Institute</p> <p><u>Work on:</u> Transition fully as an independent investigator, align research funding plan with promotion/tenure goals, consider ideas and research product for patent</p>   | <p><u>Apply for:</u> Continuing R01, NSF funded researchers apply for NIH, NIH funded apply for NSF, seek smaller NSF center and collaborative awards</p> <p><u>Work on:</u> Request funding from Chair, Dean, VPR for interdisciplinary center or institute for collaborative research, degree or certificate program, learn how to develop a business plan</p>  | <p><u>Apply for:</u> Apply for P01 and center funding, high profile foundation funding, quick hitting corporate funding (Lockheed Martin, Pfizer, Shell)</p> <p><u>Work on:</u> continuing R01s, mentor ESI, high impact publications with multiple disciplines, ERC/STC funding plans, collaborate with foundation relations on high impact and synergistic funding opportunities to bring together federal, foundation and corporate funding</p>  |

Example source: Tina Edgerly Campbell's NORDP 2014 preconference workshop materials



# Supportive university actions

- Strategic hires (both faculty and staff)
  - New faculty orientation
  - Individual consultations
- Proactively marketing business development funnels
- Customized outreach activities
  - Newly reorganized colleges and departments
  - Council of Associate and Assistant Deans for Research





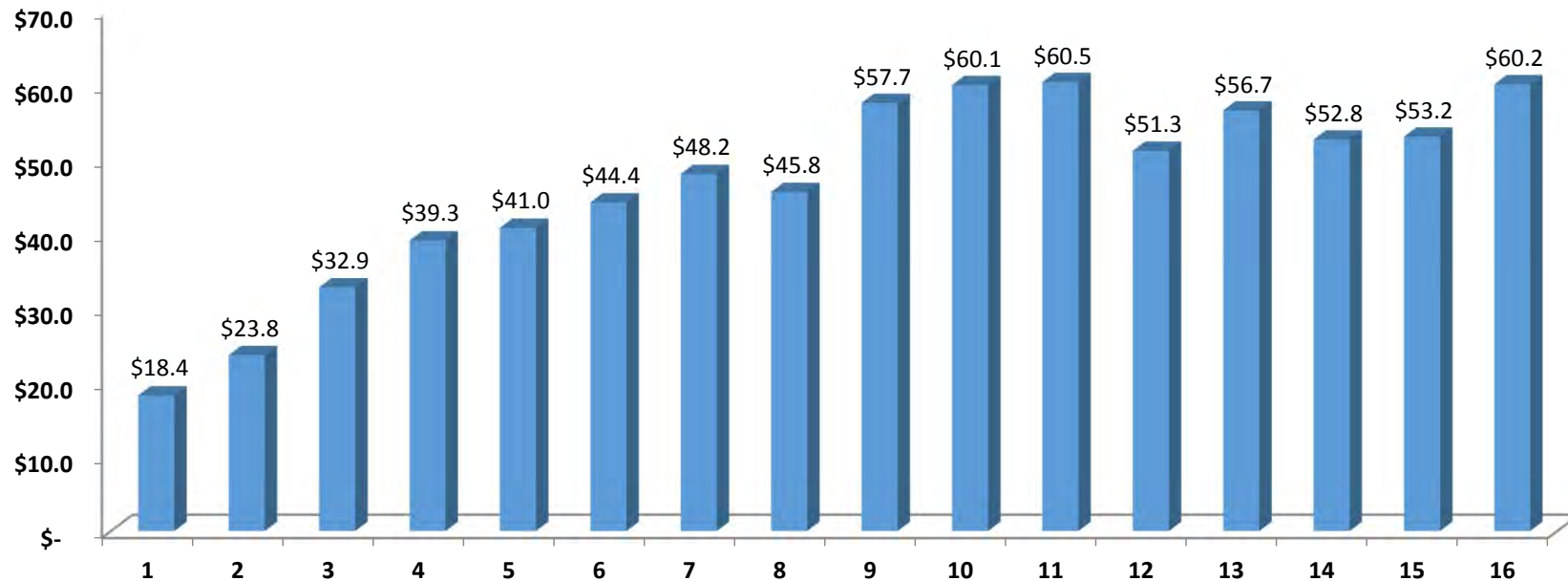
# Where are we now?

- Nearly 30 faculty with individual strategic funding plans
- Most from COE, COST, and CAES
  - Also COBE and CHHS
- Sharply increased interest and activity in sponsored programs





# Award trends 2001-2016






# Q&A

[syevans@ncat.edu](mailto:syevans@ncat.edu)   [petuttle@ncat.edu](mailto:petuttle@ncat.edu)

North Carolina Agricultural and Technical  
State University



## Using Business Development Funnels to Stimulate Increases in Research Funding: An Update

Sandra Evans      Paul Tuttle  
[syevans@ncat.edu](mailto:syevans@ncat.edu)    [petuttle@ncat.edu](mailto:petuttle@ncat.edu)  
North Carolina Agricultural and Technical  
State University

---

---

---

---

---

---

---

---



2017 NORDP RESEARCH  
DEVELOPMENT CONFERENCE

## Agenda

- Background/rationale
- Implementation
- Where are we now?

May 8 - 10, 2017 • Omni Interlocken Hotel • Broomfield, Colorado

---

---

---


---

---

---

---

---



2017 NORDP RESEARCH  
DEVELOPMENT CONFERENCE

## Background/rationale

- Environmental factors
- Institutional factors
- Faculty development needs

May 8 - 10, 2017 • Omni Interlocken Hotel • Broomfield, Colorado

---

---

---

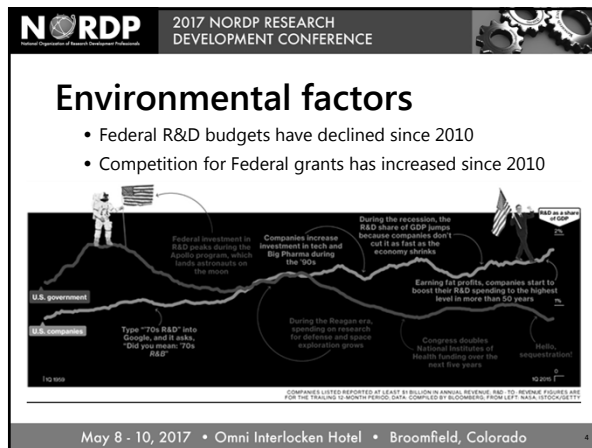
---

---

---

---

---




---

---

---

---

---

---

---

---

---

---




---

---

---

---

---

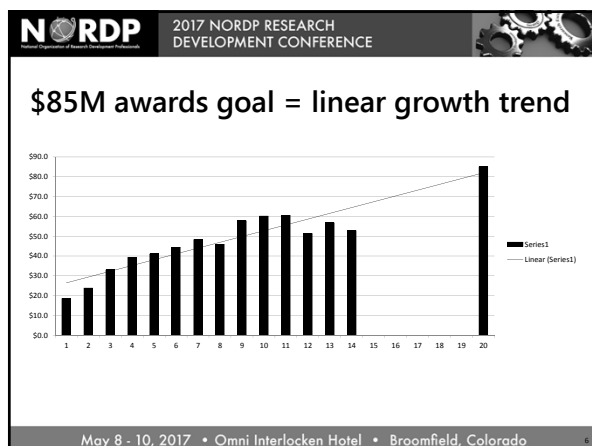
---

---

---

---

---




---

---

---

---

---

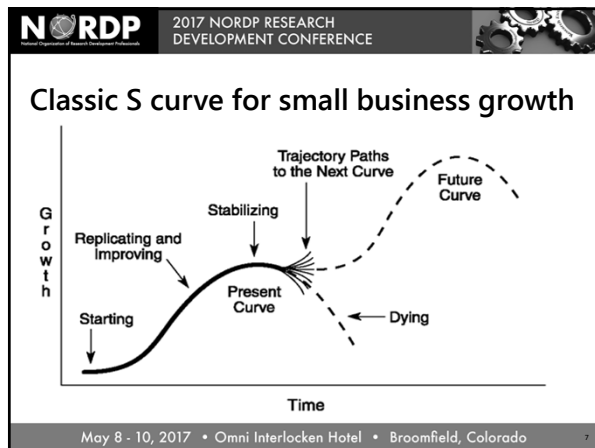
---

---

---

---

---




---

---

---

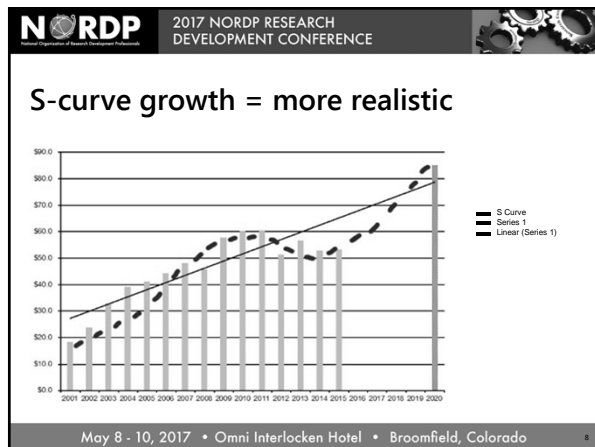
---

---

---

---

---




---

---

---

---

---

---

---

---

**NORDP** 2017 NORDP RESEARCH DEVELOPMENT CONFERENCE

### We maxed out on the old business model and had to break out a new one!

Requires intentional, deliberate strategies:

- Reorganize academic units to better motivate and support research
- Reinforce RD with strategic hires
- Diversify the funding portfolio – increase \$s from private sector, foundations and more agencies
- Proactively pursue Federal funding – cannot wait passively for opportunity announcements
- **Develop business development (funding opportunities) funnels**

May 8 - 10, 2017 • Omni Interlocken Hotel • Broomfield, Colorado

---

---

---

---

---

---

---

---



**NORDP** 2017 NORDP RESEARCH DEVELOPMENT CONFERENCE

## Strategy – A&T's academic restructuring

- Challenge
  - Managing change
- Benefits
  - Faculty are now grouped more appropriately
  - All colleges now have at least one PhD program

May 8 - 10, 2017 • Omni Interlocken Hotel • Broomfield, Colorado

---

---

---

---

---

---

---

---

---

---

**NORDP** 2017 NORDP RESEARCH DEVELOPMENT CONFERENCE

## Strategy – Develop funding funnels

### Funding Funnel Concept

May 8 - 10, 2017 • Omni Interlocken Hotel • Broomfield, Colorado

---

---

---

---

---

---

---

---

---

---

**NORDP** 2017 NORDP RESEARCH DEVELOPMENT CONFERENCE

## Logic Model for Creating and Maintaining NC A&T Funding Funnels

| Inputs   | Outputs: Activities   | Outputs: Deliverables  | Outcomes: Impact   |
|--|---|--|--|
|  |   |  | Short Medium Long  |
| DORE staff, resources, and infrastructure<br>Existing incentives to participate in sponsored programs<br>Funding landscape<br>Existing sponsor and partner relationships<br>University research stakeholders | Assisting faculty and units with strategic planning & training in sponsored program dev.<br>Developing capability statements<br>Establishing and maintaining relationships with sponsor POCs<br>Using online databases/alerts | Intentional, structured funding strategies for A&T units/offices.<br>Compelling capability statements<br>Increased number of competitive proposals<br>Increased number of people involved in sponsored programs and research | Increased number of competitive proposals submitted<br>New teams, incl. internal & external partners<br>Increased demand for DORED texts<br>Increased ability to secure funding for first time and incremental projects<br>A&T metrics show progress of funding funnel strategy<br>Faculty create small teams and write small proposals without assistance<br>Increase in extramural funding to reach \$65M in total research expenditures by FY2017<br>Increase in extramural funding to reach \$85M in total research expenditures by FY2020<br>Increased external knowledge and recognition of A&T research<br>Increase in high quality faculty hires in key research areas |

**Assumptions**

Full commitment from stakeholders, particularly as we attempt to hit A&T Preeminence 2020 targets  
 Will and capacity from DORED and other research staff and leadership across the campus  
 Appropriate linkages between campus needs and programmatic areas  
 Available professional expertise and technical support  
 Budget/program commitment in deploying and continuing activities/strategies

**External Factors**

Funding opportunity landscape as it reflects the political and economic climate  
 Barriers to participating or continuing to participate in research and sponsored programs that are beyond DORED's control/purview  
 Variations in funding landscape trends vis-à-vis A&T/stakeholder existing and emerging expertise areas

Logic model format source: Tina Edgerly Campbell's NORDP 2014 preconference workshop materials

May 8 - 10, 2017 • Omni Interlocken Hotel • Broomfield, Colorado

---

---

---

---

---

---

---

---

---

---



2017 NORDP RESEARCH  
DEVELOPMENT CONFERENCE



## Developing funding funnels

Work with college leadership to:

- Identify core funding with a very high probability of funding and ensure submission of competitive proposals
- Identify recurring funding opportunities with the highest hit rates—anticipate these and start proposal preparation
- Identify other recurring growth opportunities—strengthen relationships with program officers
- Identify other growth opportunities—presidential initiatives, DoD IDIQ contracts, private and corporate foundations, industry

May 8 - 10, 2017 • Omni Interlocken Hotel • Broomfield, Colorado

---

---

---


---

---


---

---

---



2017 NORDP RESEARCH  
DEVELOPMENT CONFERENCE



## Developing funding funnels

Work with faculty to:

- Develop personal strategic research plans to help clarify and guide engagement
- Template
  - Current situation
  - Emerging or future directions
  - Professional goals
- Endpoint
  - Living document
  - Narrative and timeline

Gilmore, Jason. Writing the research plan for your academic job application. Retrieved from <http://www.acs.org/content/acs/en/education/students/graduate/writing-the-research-plan-for-your-academic-job-application.html>

Pfirman, S., Bell, R.E., Culligan, P.J., Balsam, P., & Laird, J.D. (2008). Maximizing productivity and recognition, part 3: developing a research plan. Science Careers. Retrieved from <http://sciencecareers.sciencemag.org>

May 8 - 10, 2017 • Omni Interlocken Hotel • Broomfield, Colorado

---

---

---

---

---

---

---

---



2017 NORDP RESEARCH  
DEVELOPMENT CONFERENCE



## Implementation at A&T

- Campus roll-out
  - Presentations to colleges and departments
  - Follow-ups with individual faculty
  - Handling the inevitable pushback
- Individual strategic research funding plans

May 8 - 10, 2017 • Omni Interlocken Hotel • Broomfield, Colorado

---

---

---

---

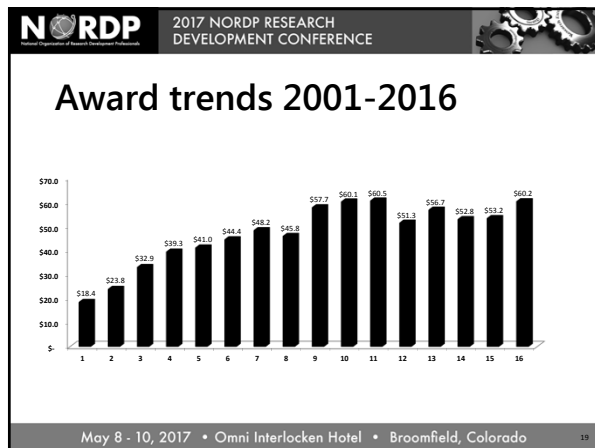
---

---

---

---





---

---

---

---

---

---

---

---

**NORDP** 2017 NORDP RESEARCH DEVELOPMENT CONFERENCE

## Q&A

Saundra Evans      Paul Tuttle  
[syevans@ncat.edu](mailto:syevans@ncat.edu)    [petuttle@ncat.edu](mailto:petuttle@ncat.edu)  
North Carolina Agricultural and Technical  
State University

May 8 - 10, 2017 • Omni Interlocken Hotel • Broomfield, Colorado 20

---

---

---

---

---

---

---

---

## Strategic Funding Plan Informational Template

- I. Name: Click here to enter text.  
Rank/title: Click here to enter text.  
Discipline/school/college/department: Click here to enter text.  
Early/mid-career/senior? Click here to enter text.

*Example: Dr. X, Assistant Professor of Smart Materials Engineering, Mechanical Engineering Department, College of Engineering. I am an early-career faculty member looking initially for new investigator support and pilot funding, but I plan to progress rapidly toward higher-dollar projects upon scale-up.*

- II. Past projects (title, sponsor, total dollar amount, start and end dates): Click here to enter text.  
Current projects/interests: Click here to enter text.  
Future/emerging interests: Click here to enter text.  
Current/potential collaborations (organization name, POC, projects/investigations): Click here to enter text.

*Example: I am currently a member of the ERC working in the smart sensors subfield of advanced materials science. I have a DOD CDMRP award for \$250,000 over three years (August 2013-July 2016) through which my research mentor and I are developing miniaturized sensors to detect battlefield shock. I am looking to expand in this subfield and partner with biomedical researchers and/or industrial partners to develop wearable diagnostic devices for civilians for a variety of uses (detecting onset of diabetic shock, myocardial infarctions, etc.).*

- III. Questions driving my research: Click here to enter text.  
Key topic areas: Click here to enter text.  
Optimal sponsors/specific programs? Click here to enter text.  
Dollar figures for support over time? Click here to enter text.  
Career goals (related to research): Click here to enter text.

*Example: I would like to know how smart sensors can interact effectively and efficiently with the body's nervous and electrical system in order to provide ongoing data streams that can be used for a variety of purposes: health/sports/medical, transportation, safety and security, etc. Interdisciplinary key topic areas include smart materials, miniaturized power sources, secure data uplinks, etc. DOD agencies and NIH are my optimal federal sponsors; specific programs include the CDMRP, other DOD medical programs, and NIH SBIR/STTR programs.*



*My three-person team (including my research mentor, a postdoc, and I) will need at least \$250,000/year to initiate investigations into these areas and grow research momentum over the next 4-7 years. After that, scale-up projects will require \$1-5 million each for three to six 2- to 4-year projects that span the following decade.*

*I hope to become one of the go-to researchers in wearable sensors and smart devices in both military and civilian environments in the next 15-20 years.*

IV. What specific funding opportunities are you currently interested in targeting?

Please respond here.

V. Timeline

| Semester    | AY15-16  | AY16-17  | AY17-18  | AY18-19  | AY19-20  |
|-------------|--|--|--|--|--|
| <b>Fall</b> | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: |
|             | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: |
|             | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: |

|               |  |  |  |  |  |
|---------------|--|--|--|--|--|
| <b>Spring</b> | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: |
|               | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: |
|               | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: |
| <b>Summer</b> | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: |
|               | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: |
|               | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: | Agency:<br>Program:<br>Deadline:<br>\$ Amount: |

# Funding Strategic Plan Example

|        | Assistant Professor  | Associate Professor   | Full Professor  |
|--------|--|---|---|
| Y<br>1 | <p><u>Apply for:</u> intramural funding, NIH K99-R00, K01, R03 or R21, &lt;\$300K NSF, CAREER, and smaller federal grants, ESI foundation, corporate funding</p> <p><u>Work on:</u> collecting preliminary data, contact foundation, corporate relations, identify mentoring team, participate as co-investigator on a major award, limit committee and "service" work to focus on establishing research portfolio, identify timeline for transition from early funding to first R01, publications, develop an "idea bank" of research questions</p> | <p><u>Apply for:</u> NIH R21, first or continuing R01, Foundation grants focusing on transitions, funding from national professional associations</p> <p><u>Work on:</u> PI grants with Co-Is from other disciplines, direct a graduate program, direct a Center or Institute, build energy around ideas for P01 type grants or NSF center grants, high impact publications, develop an "idea bank" of research questions</p> | <p><u>Apply for:</u> Continuing R01, P01, high-risk foundation grants like Simons or Keck, corporate funding such as 3M, Microsoft, Samsung</p> <p><u>Work on:</u> Patents, solicit your VPR, Dean and Provost to kick in for funds to develop a team to seek center-type funding, which requires collaboration such as co-authorship, co-teaching, and/or co-funding, high impact peer review publications, develop an "idea bank" of research questions, mentor an ESI, develop a personal website, twitter</p> |
| Y<br>3 | <p><u>Apply for:</u> intramural funding, transitions from mentored awards to independent awards, corporate and foundation prospects gathered from corporate and foundation relations, if ready, first R01, NSF awards between \$300-\$400K</p> <p><u>Work on:</u> leverage preliminary data gathered, high impact co-authorship with someone outside your discipline</p>   | <p><u>Apply for:</u> NIH R21, first or continuing R01, foundation grants focusing on transitions, funding from national professional associations</p> <p><u>Work on:</u> PI grants with Co-Is from other disciplines, direct a graduate program, direct a Center or Institute, build energy around ideas for P01 type grants or NSF center grants, develop a personal website, twitter</p>                                    | <p><u>Apply for:</u> Continuing R01, P01, high-risk foundation grants like Simons or Keck, corporate funding</p> <p><u>Work on:</u> Finalize patents and copyrights, build international collaborations, write first center award, conduct needs assessment if necessary, develop partnership with business school for business plans (necessary for successful center and program awards), identify excellent evaluators</p>   |
| Y<br>5 | <p><u>Apply for:</u> "New Investigator" R01, R21 for additional research ideas, foundation "transitions" awards, professional society awards, PI grants with Co-Is from other disciplines, direct a graduate program, direct a Center or Institute</p> <p><u>Work on:</u> Transition fully as an independent investigator, align research funding plan with promotion/tenure goals, consider ideas and research product for patent</p>   | <p><u>Apply for:</u> Continuing R01, NSF funded researchers apply for NIH, NIH funded apply for NSF, seek smaller NSF center and collaborative awards</p> <p><u>Work on:</u> Request funding from Chair, Dean, VPR for interdisciplinary center or institute for collaborative research, degree or certificate program, learn how to develop a business plan</p>  | <p><u>Apply for:</u> Apply for P01 and center funding, high profile foundation funding, quick hitting corporate funding (Lockheed Martin, Pfizer, Shell)</p> <p><u>Work on:</u> continuing R01s, mentor ESI, high impact publications with multiple disciplines, ERC/STC funding plans, collaborate with foundation relations on high impact and synergistic funding opportunities to bring together federal, foundation and corporate funding</p>  |

Tina Edgerly Campbell, MPH  
Campbell Consulting Group  
TheCampbellConsult@gmail.com