

GrantSwarmer Preliminary Research Findings

Informatics Solutions Group

February 19, 2009

Today's Goals

Walk through preliminary findings

Validate research artifacts

Set a clear mandate on directions and
scope

- Interviews
- Findings
- Modeling
- Directions

- Interviews
- Findings
- Modeling
- Directions

24 scheduled, 11 conducted
Cover all career stages
Cover key fields

	Biosciences	Informatics	Clinical	Other
Post-Doc				
Junior				
Transitional				
Senior				
Admin				

- **Interviews**
 - **Findings**
 - **Modeling**
 - **Directions**
- Collaboration
Mentoring
Grant Writing

“I don’t know
what I don’t know.”

Resources exist, but researchers don’t know where to start looking, or have limited access to information within their domain.

“It’s a self-help system.”

“It’s not enough to let people
work by themselves.”

Learning “the hard way” is frustrating, and wasteful of Harvard’s resources.

“I put in ‘thermogenesis’ and got a long list of people. I didn’t get exactly what I wanted.”

Some see the value in Catalyst, but they need more powerful tools to make it effective.

“Nobody wants to share.”

“It’s the heart of your intellectual property.”

Protection of intellectual property limits sharing of less sensitive grant materials.

“OSR sends an e-mail once a week, and there’s the Harvard Red Book. I think it can be done better, honestly.”

Information about grant opportunities is fragmented and untargeted.

“If a grant sounds appropriate, I’ll look into it, but how do you know?”

“My grant was returned without review.”

Young researchers need guidance on how to understand grant criteria.

“Finding people is organic and accidental.”

“It was all basically word of mouth.”

Young researchers lack experience in leveraging their professional networks.

“The NIH rules changed, so I had the wrong instructions.”

Researchers without grant management support struggle to stay current with application guidelines.

Senior researcher:

“I just focus on the science.”

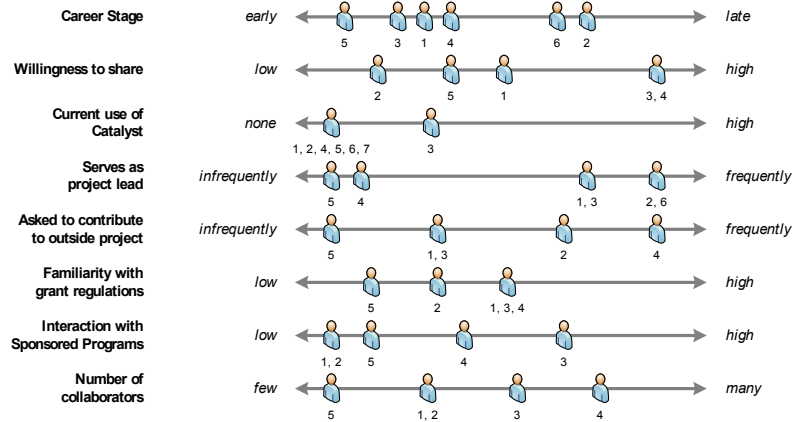
Junior researcher:

“I’m constantly writing the next grant.”

- Interviews
- Findings
- Modeling
- Directions

Behavioral dimensions
Personas
Alignment diagram
Competitive analysis

GrantSwarmer Behavioral Dimensions



David - The Young Investigator

David has advanced from the post-doc stage to a fellowship position at a Harvard-affiliated hospital. While most of this work is still under the direction of his first principal investigator, he has begun applying for his own funding, including NIH R01 grants. Despite research's size and resources, he feels isolated, but is willing to do the legwork to find new collaborators that he knows are out there. His lab lacks a grants manager, so the application process gets pretty overwhelming, especially with frequently changing NIH rules.



Age 35
Affiliation: DECAF
Field: Sciences
Level: Junior Researcher
Degree: MD, PhD

- Motivations**
- The Science.** David is passionate about his research and enjoys the intellectual stimulation he feels in his work, even though there is no pay to publish when he has the breakthrough which gets him noticed by his peers.
 - Getting a healthy promotion.** To remain in his field long-term, David must advance beyond fellowship status. He recognizes the value that data collection, publications, and grants bring to his career progress.
- Behaviors**
- Takes control of his work.** David's research is highly self-directed, and he knows his responsibility for his success. David likes the "hard questions" that his collaborators "grit" efforts.
 - Looked for networking opportunities.** David attends a monthly meeting of young researchers to learn about new research at the hospital and network with other investigators like him.
 - Writing by his own things.** While social networking isn't in David's blood, he's willing to try using technology as a new form of outreach from the collaborative collaborative research.
- Obstacles**
- How to find Dr. Right?** Potential collaborators abound, but it's hard for David to know who will be credible, honest, and available from generic lists of researchers.
 - Lack of great examples of applications.** Research faculty are often unwilling to share their own applications and struggle not to be the case of exceptions to a general set of people settings. Though he has had reference requests, they're not shared out enough to be "researcher ready."
 - Grant interviewing.** David worries "Which grants from which agencies are most appropriate for my New R01s worth the time? Why choose an R01 level at NIH?"

Children's Hospital Boston - Informatics Solutions Group

Jessica - The Post-Doc

Jessica, an assistant post-doctoral fellow, is getting a lot of attention for her work, including a research grant and graduate student mentoring. She was recruited during her first year to the program. It hasn't been a year, and she needs to do more before applying for a grant application. However, Jessica has been applying for fellow positions, and she wishes there was a way to more effectively share what she knows or needs help with technical questions outside of the expertise of her lab.



Age 25
Affiliation: DECAF
Field: Economics
Level: Post Doctoral
Degree: PhD

- Motivations**
- Being noticed.** Jessica sees the value of a robust network of connections for her own research. She is looking for a way to get noticed for her research.
 - Assessing the new team.** Jessica of the graduate work, Jessica has been looking for a way to get noticed for her research. She is looking for a way to get noticed for her research.
 - Being noticed.** Jessica sees the value of a robust network of connections for her own research. She is looking for a way to get noticed for her research.
- Behaviors**
- Being noticed.** Jessica sees the value of a robust network of connections for her own research. She is looking for a way to get noticed for her research.
 - Assessing the new team.** Jessica of the graduate work, Jessica has been looking for a way to get noticed for her research. She is looking for a way to get noticed for her research.
 - Being noticed.** Jessica sees the value of a robust network of connections for her own research. She is looking for a way to get noticed for her research.
- Obstacles**
- An unclear map.** Jessica thought it would be that she'd be able to get noticed for her research, but she's not sure how to do that. She's looking for a way to get noticed for her research.
 - Collaborative confusion.** Jessica is looking for a way to get noticed for her research, but she's not sure how to do that. She's looking for a way to get noticed for her research.
 - The lack of a good example.** Jessica is looking for a way to get noticed for her research, but she's not sure how to do that. She's looking for a way to get noticed for her research.
 - No resources.** Jessica is looking for a way to get noticed for her research, but she's not sure how to do that. She's looking for a way to get noticed for her research.

Children's Hospital Boston - Informatics Solutions Group

Thomas - The Senior Researcher

As a tenured professor, Thomas has been able to attract NIH funding and secure research support for collaborative conditions. He is proud of the many publications attributed to his name. Thomas spends most of his time managing the large and growing lab groups. This approach works for most R01 grants, but he still occasionally interviews for collaborative R01 and DECAF grants. Managing the logistics of the research enterprise is a challenge, but he is fortunate to have an administrative team that provides him from the details of the grant application process. One of the research network is a challenge, but he is fortunate to have an administrative team that provides him from the details of the grant application process. One of the research network is a challenge, but he is fortunate to have an administrative team that provides him from the details of the grant application process.




Age 52
Affiliation: Harvard Medical
Field: Cardiology
Level: Tenured Professor
Degree: MD, PhD

- Motivations**
- Research.** Thomas is interested in research and enjoys the intellectual stimulation he feels in his work, even though there is no pay to publish when he has the breakthrough which gets him noticed by his peers.
 - Getting a healthy promotion.** To remain in his field long-term, David must advance beyond fellowship status. He recognizes the value that data collection, publications, and grants bring to his career progress.
- Behaviors**
- Takes control of his work.** David's research is highly self-directed, and he knows his responsibility for his success. David likes the "hard questions" that his collaborators "grit" efforts.
 - Looked for networking opportunities.** David attends a monthly meeting of young researchers to learn about new research at the hospital and network with other investigators like him.
 - Writing by his own things.** While social networking isn't in David's blood, he's willing to try using technology as a new form of outreach from the collaborative collaborative research.
- Obstacles**
- How to find Dr. Right?** Potential collaborators abound, but it's hard for David to know who will be credible, honest, and available from generic lists of researchers.
 - Lack of great examples of applications.** Research faculty are often unwilling to share their own applications and struggle not to be the case of exceptions to a general set of people settings. Though he has had reference requests, they're not shared out enough to be "researcher ready."
 - Grant interviewing.** David worries "Which grants from which agencies are most appropriate for my New R01s worth the time? Why choose an R01 level at NIH?"

Children's Hospital Boston - Informatics Solutions Group

David · The Young Investigator

David has advanced from the post-doc stage to a tenured position at a research-affiliated hospital. While much of his work is still under the direction of his lead primary investigator, he has begun applying for his own funding, including NIH grants. Despite research's slow pace and resources, he feels isolated, but is willing to do the legwork to find new collaborators that he knows are out there. His lab lacks a grants manager, so the application process gets pretty overwhelming, especially with frequently changing NIH rules.



Motivations

- The Science.** David is passionate about his research and enjoys the intellectual satisfaction he feels in his work, even though there is no way to predict when he'll have the breakthrough which gets him noticed by the press.
- Getting a faculty promotion.** To remain in his field of interest, David must advance to a tenured faculty position. He recognizes the risks that data collection, publications, and grant-writing in his career progress.

Behaviors

- Takes control of his work.** David's research is highly self-directed, and he knows he's responsible for his own success. David takes the "lead quarterback" role in collaborative grant efforts.
- Looks out for networking opportunities.** David attends a monthly meeting of young researchers to learn about new research at the hospital and network with other investigators like him.
- Writing by new things.** While social networking isn't David's thing, he's willing to reach out to technology in new forms if it offers value from the effectiveness of collaborative research.

Obstacles

- How to find Dr. Right?** Potential collaborators abound, but it's hard for David to know who will be curious, helpful, and available from grant-to-grant cycles of researchers.
- Lack of great examples or instructions.** Research faculty are often unwilling to share old applications and struggle not to see the value in responses to multiple or complex writing styles. Though he can find reference materials, they're not filtered down enough to be immediately useful.
- Grant matching.** David wonders, "Which grants from which agencies are most appropriate for what I've been working on? Why choose an R01 over an R01P?"

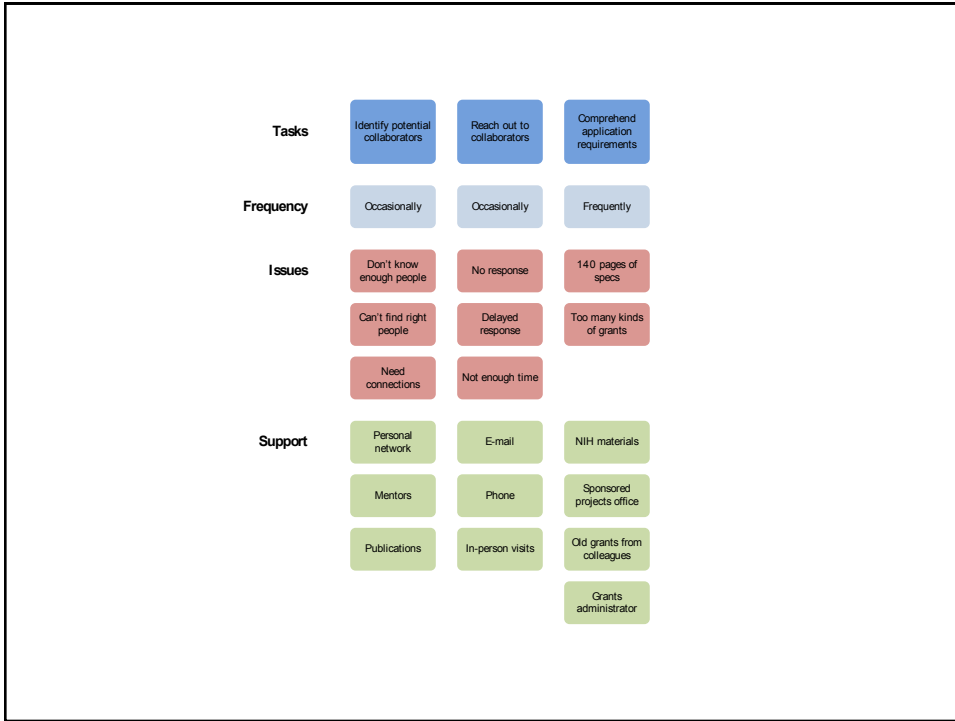
Children's Hospital Boston · Informatics Solutions Group

David · The Young Investigator

- Passionate about his research.
- Working toward a tenured position.
- Takes the "lead quarterback" role.
- Regularly meets with other young researchers.
- Open to new technologies.
- Has trouble finding reliable collaborators.
- Needs better example materials.
- Wonders which type of grant is right.

Grant Application Alignment Diagram





	Indirect Competition		Direct Competition	
	Facebook	LinkedIn	Epernicus	Cayuse
Audience	Anyone 13+	Working professionals	Health and life sci. professionals	Grant writers
Details	<ul style="list-style-type: none"> Gold standard of social networking 175 million users Ability to post to others Status broadcast News feeds Open API 	<ul style="list-style-type: none"> Profile = resume + contacts Embraces "degrees of separation" Searches are based on users' network of contacts 	<ul style="list-style-type: none"> Centered at Harvard & MIT Ability to express expertise in topic, method, material BenchQ: Question broadcasting Mentorship genealogy 	<ul style="list-style-type: none"> Interfaces with grants.gov 45 institutional clients since 1994 Auto-fill grant forms from a centralized web-based data store Grant type conversion, e.g. R01 to R21 Budget management Support for subcontracts

- Interviews
- Findings
- Modeling
- Directions

Strategy
Discussion

- Signal Amplification: **Enhance existing workflows, rather than replace them**
- Intermediation: **Leverage professional and social network to make connections**
- Motivation: **Provide users clear value for participation**
- Synergy: **Align GrantSwarm with greater Catalyst activities**

1. Grant Opportunity Search
2. Document Management
3. Document Generation
4. Resource Library
5. Groupware Tools
6. Intermediated Social Networking

Driver 1:

Grant Opportunity Search

Automated scraping of grants.gov

Community postings of grant suggestions

Network feedback for decision making

Driver 2:

Document Management

Virtual network drive or upload-and-share

Export to PDF

Progress tracking

Online office tools integration

Driver 3:

Document Generation

Biosketches & Other Support Forms

Integration with profiles and publications

Provide motivation for maintaining profiles

Driver 4:

Resource Library

Links to most current NIH resources

Repository of old grant applications

Access to institutional assistance

Driver 5:

Groupware Tools

Grant team mailing list with online archive

Task lists with gentle nagging

RSS Updates

Community support forums

Driver 6:

Intermediated Social Networking

“LinkedIn for Scientists”

Seek answers based on network context

Visualize degrees of separation

Action Item:

**What is a compelling Phase 1
feature set?**

- Grant search based on content scraped from grants.gov
- Upload, manage, and share documents
- Profile mashup for finding collaborators
- Generate biosketches & OSFs from profiles
- Curated resource library
- Task lists with assignments and reminders
- Team mailing lists with online archive
- RSS updates of grant team activity

Action Item:

Can Catalyst profiles satisfy data needs of NIH biosketches?

Catalyst Profile	NIH Biosketch
Name	Name
Title	Position
Department	
Contact Information	
Narrative	
Awards & Honors	Honors
Publications	Peer-Reviewed Publications
	Professional Societies
	Active Research Support
	Completed Research Support
	eRA Commons ID
	Educational History
	Employment History
	Academic Appointments
	Licensure & Board Certifications

CRISP: NIH Award Search

Automatically pull NIH grant data when user is PI

Pull data based on NIH grant number

NSF Award Search

Automatically pull NSF grant data when user is PI

Pull data based on NSF award number

Fall back on user data entry

Action Item:

Can Catalyst profiles satisfy social networking needs?

Explicit metadata

Are MeSH terms too blunt for precise matches?

Epernicus users describe topics, methods, materials.

Profile privacy

Should biosketch material be used in public search?

How much should be kept private?

Non-hierarchical networks

Should relationship labels be required?

Facebook recommends, does not require.

LinkedIn requires relationship before contact.

Next Steps

Finish information gathering

Begin design phase