Pro Bono Analytics:
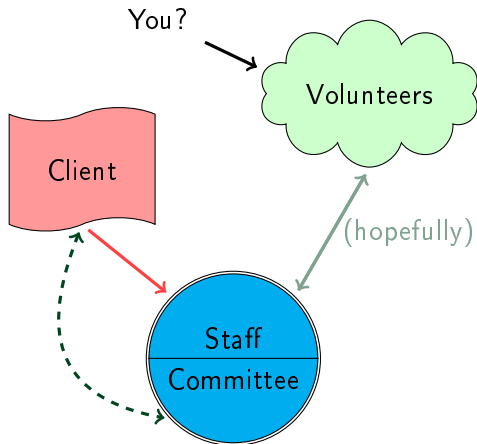## The Volunteer Experience

Paul A. Rubin

- INFORMS members (and non-members) volunteer to work with charitable organizations
- Charitable organizations ("clients") request analytics help
- Central committee assists clients with formulation and scoping of requests
- Volunteers provide their services free
  - Necessary expenses covered by clients
- Win-win
  - Clients receive free/low-cost assistance
  - Volunteers gain valuable real-world experience, do something worthwhile

- Other organizations already engage in similar endeavors
  - Médecins Sans Frontières(founded 1971)
  - Engineers Without Borders USA(incorporated 2002)
  - Statistics Without Borders (American Statistical Association) (founded 2008)
- Operational Research Society (UK) Pro Bono Operational Research
  - Free consultation to "Third sector" agencies
  - Launched September 2013
  - Very successful

- Public Sector OR section
- "Doing Good with Good OR" competitions
- Pro Bono Analytics
  - 2014: "OR Without Borders" proposal from Michael Johnson (UMass-Boston) and David Lovell
    - Board approved funding for 2015 to test concept
  - 2015: Ad hoc committee got ball rolling
  - 2016: Work in progress
    - Funding for one staff member
    - Initiated some projects
    - Expanded the committee
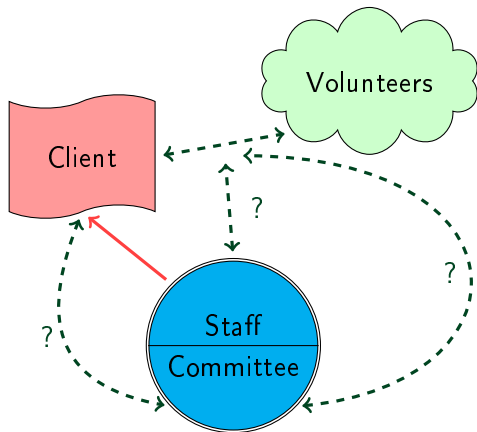   - Hoping to move from "strategic initiative" to "program"

Process (I)

1. Volunteers register (with brief bio), are added to mailing list
2. Potential clients contact us (web form) with expression of interest
3. Committee conducts "scoping call" with client
4. Client submits project request form(s)
5. Committee reviews form(s), consults with client as needed
6. Request for volunteers sent to volunteer mailing list
7. Volunteers express interest to PBA staff

You?

Volunteers

Client

(hopefully)

Staff Committee

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8. Volunteer info passed to client
9. PBA arranges conference call between client and volunteer(s)
10. Client selects volunteer(s)
11. Engagement Confirmation agreement signed by client and volunteer(s)
12. FUN BEGINS!

Current Status

- Approximately 200 volunteers as of June 2016 (58% INFORMS members)
- 20 initial client contacts as of early April 2016

1	2	3	4	5
Initial contact	Scoping	Project request form	Out to volunteer list	Selecting volunteers
3	1	2	1	2

6	7	8	9	-
Engagement Confirmation	In progress	Completed	POSTPONE	DROP
2	2	-	2	5

Sample Engagements

- Spectrum Works (northern NJ)
  - Job training for young adults with autism spectrum disorder
  - Needs help pairing and scheduling supervisors and students

- Community Empowerment Solutions (HQ in NY; operates in Guatemala, Ecuador, Nicaragua, The Dominican Republic and Haiti)
  - Trains/equips local entrepreneurs to sell affordable, high-impact technology products in under-served areas
  - Needs help designing, administering and analyzing surveys to assess project success, products that do/do not produce impact, . . .

- Family Service of Greater Boston
  - "[H]elps children and families facing life's most difficult challenges"
  - Currently: data collection is uncoordinated, reporting is a "scramble"
  - Need help with: identifying a data management strategy; building a data repository and access methods/protocols; collecting data (if they don't have it); analyzing data

You're Thinking	Reality Is
"Big" data	Unruly data
Optimization/Simulation/...	More likely basic data analysis
Machine learning	Summary statistics, regression
Stochastic multiobjective ...	Good solution quickly/cheaply
Custom programming	IT resources limited
My value = domain expertise	My value = "systems thinking"

Why Volunteer?

- Do something different
- Make a difference
- Give back
- Experience challenges of analytics in the "real world"
- Course credit/project?

Connecting with Us

- Web site
- Volunteer mail list
- Pro Bono Analytics "Community" on INFORMS Connect
  - Need to get more volunteers on it
  - Place to post messages to other volunteers
  - Library for uploaded files
    - Currently: some helpful documents from the OR Society
  - Volunteers who do not belong to INFORMS can still receive access to Connect
- Sessions at INFORMS meetings
- See links on final slide

PRO BONO ANALYTICS

Ad Hoc Committee

- **David Hunt** (chair): VP of Chapters & Fora; Strategic Planning committee; Committee on Engagement with Organizations; past chair Railway Applications and New Jersey chapters; Oliver Wyman
- **Victoria Chen**: founder, INFORMS Workshop on Data Mining and Artificial Intelligence; co-Founder, INFORMS Section on Data Mining; University of Texas-Arlington
- **Jim Cochran**: chair *OR/MS Today* and *Analytics* committees; founder ASA Statistics Without Borders; University of Alabama
- **Arnold Greenland**: CAP, Analytics Conference committee; University of Maryland
- **Michael Johnson**: VP-elect Chapters & Fora; past president SPPSN (now Public Sector OR); University of Massachusetts-Boston
- **Paul Rubin**: IT committee drone; Michigan State University (emeritus)
- **Rina Schneur**: past INFORMS President; Continuing Education committee; formerly with Verizon

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- **Jeff Cohen**: INFORMS Director of Marketing
- **Terry Cryan**: INFORMS staff lead; former Director of Meetings

PRO BONO
ANALYTICS

- Tell your OR/IE/MS/analytics friends about Pro Bono Analytics
- Tell charitable organizations about it

Links

Pro Bono Analytics home page
https://www.informs.org/Pro-Bono-Analytics

Volunteer sign-up page
https://www.informs.org/Pro-Bono-Analytics/Sign-Up-to-be-a-Pro-Bono-Volunteer

Connect group
http://connect.informs.org/communities/community-home?CommunityKey=e9da7d24-226e-42ce-b5e4-4024368efe4f