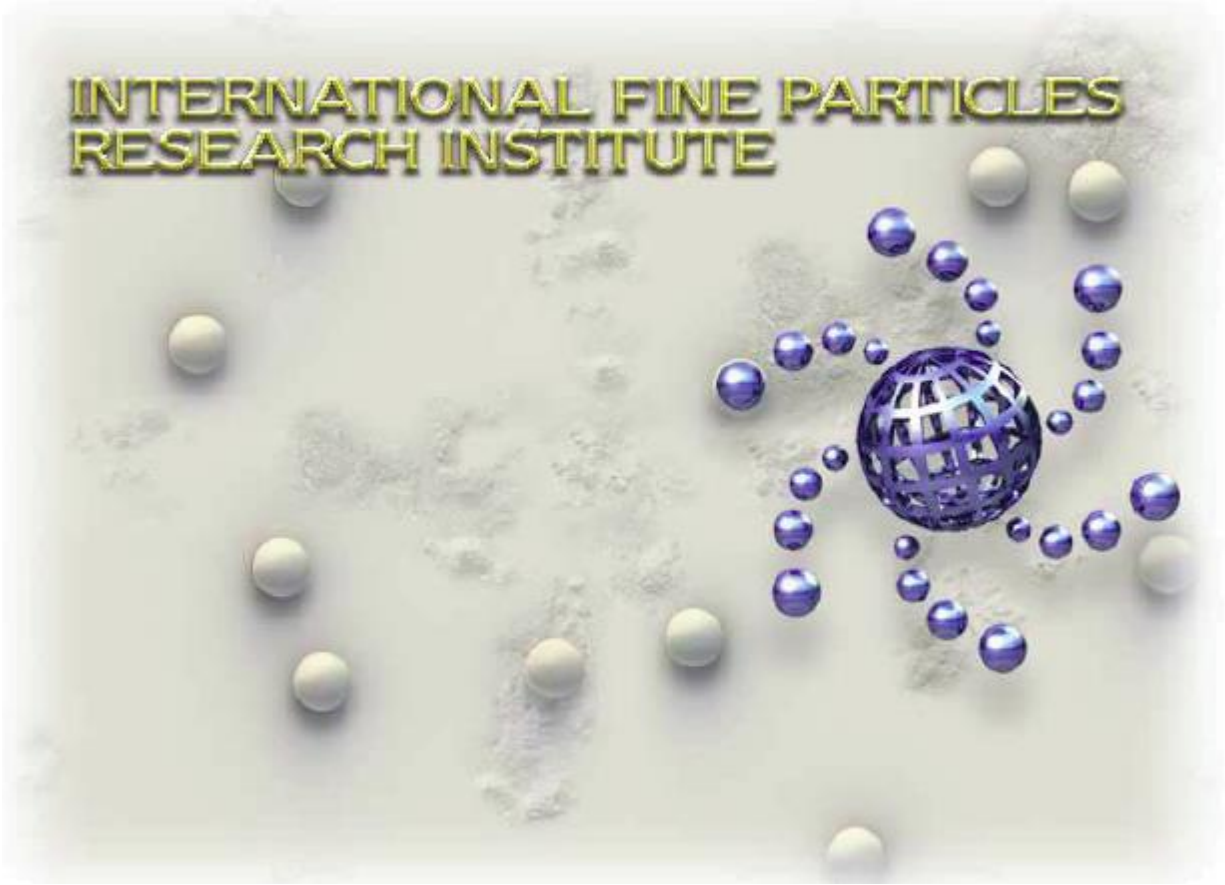

2022 AGM Briefing Paper

Prepared by Jim Michaels
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As I prepare this briefing paper, IFPRI's 2022 Annual General Meeting is just over a month away. Happily, we're meeting in person this year, for the first time since 2019. It will be wonderful to be able to interact outside a twenty-box Zoom screen!

We're returning to a more typical AGM agenda, albeit with a few changes that are intended to improve meeting flow and accessibility. The business meeting which used to start the meeting has been moved forward to June 8 and will be virtual (via Zoom). This allows us to start the physical meeting on Sunday morning with the review and project presentations. Project posters will be reviewed on Monday in the usual round-robin format. On Tuesday, we have two plenary talks, the consultants' review of the concentration areas, and the brainstorming sessions for new project and brief generation. On Wednesday, we'll review and rank new project and review proposals and discuss the briefs that emerged from the brainstorming sessions. Finally, Thursday is dedicated to making project selections (dot voting) and final business decisions; these are members-only sessions.

A positive lesson that we learned in our two virtual AGMs is that virtualization *increased* attendance by member companies. We're attempting to maintain this higher participation rate by virtualizing parts of this year's meeting. The presentations on Sunday and Tuesday will be webcast, and we will use Zoom breakout rooms to provide remote access to the Monday posters and Tuesday brainstorming sessions. We can't warp time, so these virtual sessions may be uncomfortably early or late for some of you!

We are also making permanent the practice of asking our research associates to record 20-minute project videos that will be posted on the meeting materials page on the IFPRI website. These can be viewed by any of your colleagues within your corporate email domain – once they register on the website. In addition, the presentation slides and a written abstract for each project will be downloadable for distribution within your companies from the same page.

Finally, we will have the ever-important happy hours and banquet – Willie promises plenty of delicious Belgian beer!

Status of the Technical Program

The current technical program is summarized in Table 1. Karen Daniels' project on non-local powder rheology is ending this year, and three projects (Gaiani, Ashgriz, and Koos) are up for renewal. We also have three collaboration projects in progress. Two of these (Daniels & Nott; Smith & Markl) are just getting started and will be presented at next year's AGM. Finally, two reviews are in progress.

We voted at the last AGM to send out five project briefs for proposals and added a sixth (on powder reconstitution) later in the year. Unfortunately, neither of the professors I contacted for the sixth brief agreed to submit a proposal. We did receive at least one proposal for each of the other briefs, as shown in Table 2. These are posted on the AGM meeting materials page, along with the three renewal proposals. All of these, except for Claire Gaiani's, have been revised to address questions and comments from the

winter meeting. Claire opted not to revise hers and commented "I will not submit a new one as my later was not accepted and the requirements received are slightly far from my actual research work."

Table 1: 2021-2022 IFPRI Technical Program

Type	No.	C	SR	F	D	W	SE	Project	Research Associate	Institution	Country	End	Term
Projects	1	X			X			Dry Powder Rheology	K. Daniels	NCSU	US	2022	2
	2	X				X		Wetting and dispersion of Powders	C. Gaiani	U. Lorraine	France	2022	1
	3	X		X		X		Characterization of Spray Nozzles at Industrial Conditions	N. Ashgriz	U. Toronto	Canada	2022	1
	4	X				X		Slurry and Paste Rheology	E. Koos	U. Leuven	Belgium	2022	1
	5	X	X	X			X	Model-Based Control of Crystallization	Z. Nagy	Purdue U.	US	2023	2
	6				X		X	DEM Roundrobin	J. Seville; K. Windows-Yule	U. Birmingham	UK	2023	2
	7			X	X			Powder adhesion to metal surfaces during compaction	C. Sinka	U. Leicester	UK	2023	1
	8	X		X			X	Model-based Design of Granular Products	R. Smith	U. Sheffield	UK	2023	1
	9	X				X		Simplified Industrial Formulations	J. Vermant	ETH	Switzerland	2023	1
	10	X	X		X		X	A Systems Engineering Approach to Dry-Milling with Grinding Aid Additives	A. Kwade	TU Braunschweig	Germany	2023	1
	11				X		X	Precision powder feeding	P. Nott	IISc Bangalore	India	2023	1
	12			X		X		Crystal Shape Prediction	M. Doherty	UCSB	US	2024	2
	13			X				Spray Drying Kinetics and Morphology	Maciej Jaskulski	U. Lodz	Poland	2024	1
	14				X			Selection of Flow Aids	Raj Dave	NJIT	US	2024	1
	15			X				Air-Induced Defect Formation During Compaction	Ken Kamrin	M.I.T.	US	2024	1
Collab	1					X		Simplified Industrial Formulations Collaboration	L. Hsiao J. Vermant	NCSU ETH	US Switzerland	2022	-
	2	X			X			Non-local Rheology	Karen Daniels Prabhu Nott	NSCU IISc Bangalore	USA India	2023	-
	3	X		X			X	Model Calibration as a Tool for Materials Characterization	Rachel Smith Daniel Markl	U. Sheffield U. Strathclyed	UK	2023	-
Reviews	1				X			Dynamic Powder Flow	Nico Gray	U. Manchester	UK	2022	-
	2				X			Horizons in Dry Granular Modeling - Beyond DEM	Farhang Radjai	U. Montpellier	France	2022	-

Table 2: 2021 Briefs and Proposals

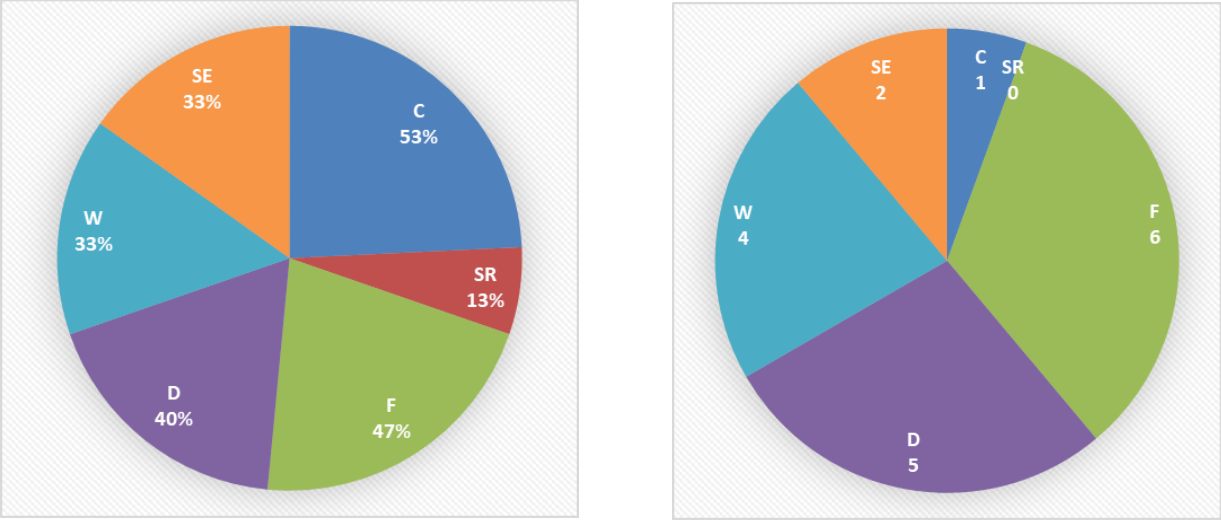
Type	C	SR	F	D	W	SE	Project	Research Associate	Institution	Country	Status
Reviews				X			Dynamic Powder Flow	Nico Gray	U. Manchester	UK	in progress
				X			Horizons in Dry Granular Modeling - Beyond DEM	Farhang Radjai	U. Montpellier	France	in progress
					X		Tribology, Friction, and Contact Mechanics in Wet Systems	Jeffrey Morris	CCNY	US	tbd
Proposals				X			Aeration & Deaeration of Geldart C Powders	Olivier Pouliquen	Aix Marseille U.	France	revised
								Brunello Formisani	U. Calabria	Italy	declined
				X	X		Drying of Wet Powders with Shear to Prevent Agglomerate Formation	Heather Emady	Arizona State U.	US	revised
								Alban Sauret	UCSB	US	revised
			X				Spray Drying of Pastes to Improve Sustainability	Volker Gaukel	KIT	Germany	revised
			X			X	Numerical Modeling of Spray Droplet Formation	Olivier Desjardins	Cornell U.	US	revised
								Meng Wai Woo	U. Auckland	NZ	revised
					X	X	Computational Modeling of Suspensions				
								Roseanna Zia	Stanford U.	US	revised
					X		Dry Powder Reconstitution	John Fitzpatrick	U. College Cork	Ireland	declined
								Erik van der Linden	Wageningen U.	Netherlands	declined
Renewals	X				X		Wetting and dispersion of Powders	C. Gaiani	U. Lorraine	France	unrevised
	X		X		X		Characterization of Spray Nozzles at Industrial Conditions	N. Ashgriz	U. Toronto	Canada	revised
	X				X		Slurry and Paste Rheology	E. Koos	U. Leuven	Belgium	revised

Please have the appropriate colleagues in your companies review these proposals and provide feedback prior to the AGM.

Balance of Technical Program

One of the challenges of managing IFPRI's technical program is to develop a project portfolio that is balanced and meets the needs and interests of our members. IFPRI veterans know that we use project categories to measure the balance of the program among our concentration areas: wet systems, dry systems, formation, size reduction, characterization, and systems engineering. This categorization scheme is a bit arbitrary, as many projects belong to multiple categories. As a result, we recently began to assign multiple categories to each project. Both categorization schemes are shown in Table 1, with the red "X" denoting the master category. The two pie charts below show the project distributions in these two schemes.

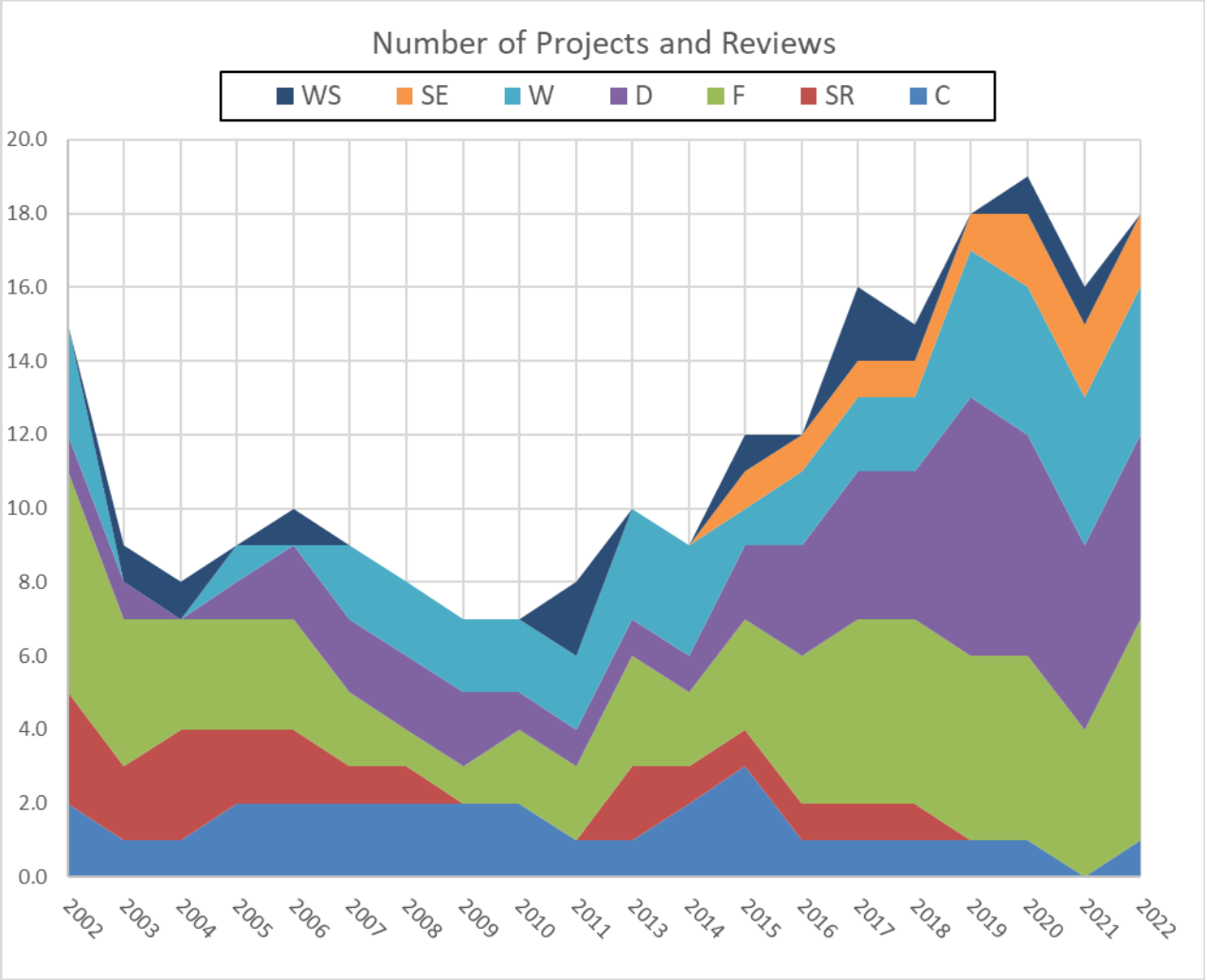
Based on the single-category scheme (right-hand chart), our program is over weighted in formation and dry systems. The multi-category scheme is more balanced, however it also indicates that size reduction is underweighted.



Distribution of projects in IFPRI 2019 technical program

Left: multiple categories per project; Right: one category per project
(F=formation, D=dry systems, W=wet systems, SE=size enlargement,
C=characterization, SR=size reduction)

The following plot shows how the number and distribution of projects and reviews has varied over the past twenty years. The total number of projects reflects the variation in membership and clearly shows the growth that IFPRI has enjoyed since 2010. (We all hope this continues!). The single-category project distribution has varied significantly from year to year. I believe that the disappearance and re-emergence of some categories is an artifact of this way of categorizing projects, however it also indicates how member interests vary over time.



Distribution of IFPRI Projects 2002-2022

WS=workshop, SE=size exclusion, W=wet systems, D=dry systems,

F=particle formation, SR=size reduction, C=characterization