**2019-2020 IFPRI Projects, Reviews, Workshops, Roundtables and Proposed Project Briefs**

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| **Type** | **Research Area** | **Project Title** | **Research Associate** | **Institution** |
| **Project** | Size Reduction | Systems Engineering Approach to Dry Milling with Grinding Aids  |  A. Kwade |  TU Braunschweig |
| Formation | Self-Assembled Monolayers as Nucleating Surfaces to Study Early Formation Pathways of Crystallographic Polymorphs |  U. Wiesner |  Cornell U. |
| Crystal Shape Prediction |  M. Doherty |  UCSB |
| Creating Tuneable Agglomerates via 3D Printing |  K. Hapgood |  Deakin U. |
| Characterization of Spray Nozzles at Industrial Conditions | N. Ashgriz | U. Toronto |
| Process and Product Models for Wet Granulation | R. Smith | U. Sheffield |
| Dry Systems | Prediction of Segregation |  J. McCarthy |  U. Pittsburgh |
| Flowability Assessment of Weakly Consolidated Powders |  C. Hare |  U. Surrey |
| Controlling Rheology via Boundary Conditions in Dense Granular Flows |  K. Daniels |  NC State U.  |
| Scaling Rules for Powder Mixing  |  I. Govender |  U. KwaZulu-Natal |
| Powder Adhesion to Metal Surfaces During Compaction | C. Sinka | U. Leicester |
| Modelling Powder Flow Through Screw Feeders | P. Nott | ITT Bangalore |
| Wet Systems | On the Long-Term Stability of Colloidal Gels | W. Poon | U. Edinburgh |
| Cake Filtration | U. Peuker | TU Bergakademie Freiberg |
| A Multi-Scale Study of Powder Reconstitution Phenomena | C. Gaiani | U. Lorraine |
| Slurry and Paste Rheology | E. Koos | KU Leuven |
| Simplified Industrial Formulations - Design Challenges | J. Vermant | ETH Zurich |
| Systems Engineering | Model-Based Control of Crystallization |  Z. Nagy |  Purdue U. |
| **Collaboration** | Wet Systems | Simplified Industrial of Colloidal Dispersions (Proposed) |  L. Hsiao | NC State U. |
| **Review** |  Size Reduction | Interaction of Material Properties with Mill Type on Influencing Product Attributes: Shape, Size, PSD, Dissolutions, etc | TBD | TBD |
| Characterization | Measurement and Quantification of Fines in the Presence of Larger Particles – Remapping the Analysis Space of an Industrially Relevant Issue | K. Jensen | National Research Centre for the Working Environment |
| Smart In-Situ Pressure Sensor Particles for Process Characterization | TBD |  |
| Wet Systems | Critical Review of Tribology, Friction and Contact Mechanics in Wet Systems | TBD |  |
| Wet Systems | In-Line Measurements of Wet System Properties | D. Scott | Advanced Particle Sensors, LLC |
| **Round-table** | Dry Systems | Round Robin Exercise on Calibration of DEM Simulations |  J. Seville |  U. Birmingham |
| **Other**  | Education and Advocacy | Economic Justification for Particle Technology – Update and Expand the 1985 Merrow Report | TBD |  |
| **Workshop** | Dry Systems |  Cohesion –  Analyze, Model, Characterize, and Measure Cohesion in Realistic Systems and Understand Its Origin |  Time and Location to TBD |
| **Project Briefs for Proposed Projects (2020-2021)** | Formation | Kinetic Model to Predict Particle Morphology from Spray Drying | TBD |  |
| TBD |  |
| Prediction of Air Induced Defect Formation During Powder Compaction | TBD |  |
| TBD |  |
| Powder Flow | Wall Make Up Mechanisms at Low Stresses Regimes | TBD |  |
| TBD |  |
| Selection Criteria for Flow Aids to Improve Flowability of Cohesive Powders | K. Ambrose | Purdue U. |
| R. Dave | NJIT |
| Size Reduction | Co-Milling of Materials |  P. Hill | Mississippi State U. |
|  L. Tavares | Federal University of Rio de Janeiro |