



IR-4 PMC & CLC MEETING REPORT

March 13-15, 2017

Hyatt Place National Mall

Washington, DC

Action Items

- 1. J. Baron will send a letter directly to the Chavonda Jacobs-Young requesting a meeting with IR-4.**
- 2. Ask T. Humfeld and J. Keeling for a detailed discussion as to what it will take for IR-4 to be funded through the Farm Bill as part of the CLC requested FB 101 training session**
- 3. J. Wise – Include the performance budget as an agenda item for the summer PMC meeting**
- 4. V. Starner, C. Palmer—include CLC presentation in Workshops**
- 5. M. Braverman—The voting members of the PMC would like to receive a public sector letter of assistance for the Nobactra and *Pseudomonas syringae* G10 projects**
- 6. J. Wise, J. Baron—put together a proposal of goals and efficiencies to keep the momentum going for the July PMC**
- 7. J. Baron— write a formal policy regarding secondary registrants who seek IR-4 assistance for the same AI as primary registrant, send to PMC for comment, then arrange for RU legal assistance to review the proposal.**

MOTIONS:

- 1. To accept the minutes of the fall 2016 PMC Meeting. Approved**
- 2. To support M. Braverman in providing registration assistance for Nobactra and *Pseudomonas syringae* G10 projects. Approved**

Monday March 13th 3:00-5:00 pm

CLC Workshop on effective Congressional visits led by Laura Phelps - How to prepare to meet Members of Congress and their staff on Capitol Hill.

Key points:

1. Make an appointment—do not just show up
2. Introduce yourself and talk about what you do (do not expect them to know what you are talking about. GET TO THE POINT
3. Ask for support of the program. Ask for more funding. Tell them what you want.
4. Offer to supply whatever information they may need.
5. It is ok to call Jerry if more information is needed.
6. Give them a tour of agriculture they like to get out of the office
7. Follow up. Send thank you notes.
8. Visit them when they are home. More likely to visit with the Congressperson directly when they are in their home district. They are much more relaxed then than in DC.

Tuesday March 14th 9:00 am – 11:30 am CLC only

See CLC roll call list attached.

- **Welcome and 2016 reflections** – Mike Bledsoe
 - Congressional Subcommittee
 - FUW 2016 – CLC Presentation by Lori Berger— It is really a good thing to have a CLC member give a presentation at the IR-4 workshops. Should be a regular agenda item.
 - USDA –Still waiting for an appointment. Not much going on until then.
- **New Members and Reappointments** - Mike Bledsoe — New members are Amy Gandhi (Kemin Industries), Ron Williams (Coco-Cola) and Mark Seetin (US Apple Association). Reappointments are: Mark Arney, James Cranney, Laura Phelps, Terry Humfeld, Todd Scholz and Alan Schreiber. Motioned and approved to accept all.
- **Congressional Subcommittee Recap** – Bob Simerly and Lori Berger — having conference calls every other month. These have become very effective in bringing awareness to the CLC of the lobbying efforts of the CLC. Next call April 19 will open the calls to all members of the CLC. Motioned to keep the subcommittee. Approved.
 - Goals
- **USDA – Tactical Sciences: Call to Conversation**
 - Aerts, Baron, Bledsoe, Simerly, others?—Tactical Sciences conference was held by NIFA where members of various programs got together to discuss an overall strategy of raising funds for a combined large program rather than individual small programs. A white paper will be distributed in the near future. This effort by NIFA to form the Tactical Sciences Collation is potentially positive and much different than USDA's plan to consolidate IR-4 under the IPM Program.
- **Path Forward brief** – Jerry Baron- USDA (Hedberg) continues to explore the potential to convert IR-4 from a “Special Grant” into a “Cooperative Program”. This change would allow host institutions to collect 10% of funds Indirect costs. Jerry discussed the Organizational Assessment findings which felt efficiencies should be pursued rather than combining regions or closing labs. The existing infrastructure is too valuable. Need to focus on what is necessary not on what is nice.
- **Farm Bill** – Jerry, Dennis, Lori
 - Should IR-4 pursue — Maybe yes, maybe no. Hearings have begun but most work will be completed at the last minute. There was some uncertainty about being included in the Farm Bill as the funding source for IR-4. Many did not understand the implications of the Farm Bill and the group decided they need an education in what the Farm Bill is therefore Lori Berger, Laura Phelps and Todd Scholz will develop a Farm Bill 101 training for the CLC.

- **New Administration Opportunities/concerns** — Cuts to EPA and USDA are of concern. Still no Secretary at USDA.
- **What's new(s)**
 - FSMA—Regulations are changing, more concerning though are the “secondary standards” that are not regulated rather driven by public perception from the Big Box stores.
 - Other items—Keith Pitts is co-organizing a multi-day biopesticide session in association with the Western Region SLR meeting April 25-26, 2017 in Ft. Collins.

Tuesday March 14th: 1:00 pm – 5 pm (Joint IR-4 CLC & PMC Session)

- Welcome & Introductions — Attendees: J. Wise (chair), M. Aerts, J. Baron, L. Berger, M. Bledsoe, D. Buhler, J. Burns, A. De Young, Amy Gandhi, L. Gu, R. Hedberg, M. Hengel, D. Kunkel, K. Malamud-Roam, A. Mize, A. Monterroso, S. Novack, L. Phelps, K. Pitts, D. Rossi, T. Scholz, B. Simerly, A. Simmons, B. Tanner, on phone — T. Barkalow, M. Braverman, J. Calabro, D. Carpenter, T. Humfeld, J. Munyaneza (Tuesday on phone, Wednesday in person) C. Palmer, V. Starner, R. Williams,
- Update from Commodity Liaison Committee, M, Bledsoe — The CLC was active all year long. The Congressional Liaison subcommittee met every other month and developed a contact list of representatives to visit on the Hill. They applauded NIFA in organizing the Call for Conversation on Tactical Sciences. Lori Berger, Laura Phelps and Todd Scholz will be developing a “Farm Bill 101” training in order to help the entire CLC understand the Farm Bill. New members of the committee are Amy Gandhi (Kemin Industries), Ron Williams (Coco-Cola) and Mark Seetin (US Apple Association). They are facing challenges in Big Box stores requiring “secondary standards” due to public perception.
- IR-4 2016 Year End Summary, J. Baron —
 - Kudos to the CLC they have been very active and organized. They have many coordinated appointments scheduled for Hill visits.
 - 2016 was a very productive year with 1000 new uses that can be added to manufacturer's labels.
 - C. Palmer received \$6 million grant for pollinator work to be distributed over a 5-year period.
 - In May 2016, IR-4 hosted an Organization Assessment. The Organizational Assessment panel felt efficiencies should be pursued rather than combining regions or closing labs. The existing infrastructure is too valuable. Need to focus on what is necessary not on what is nice. Efficiency exercises were conducted to identify areas of improvement in the labs and field research.
 - J. Baron attended the United Fresh Public Policy Council in Washington. Laura Phelps and John Keeling are members of the United Fresh Government Relations Council.
 - IR-4 joined the National Coalition for Food and Agricultural Research (NCFAR) and was invited to the Ag Research Congressional Exhibition on April 5, 2017 at the US Capitol visitor center, Congressional auditorium and atrium.
 - J. Baron continues to meet with individual/groups to garner support for IR-4. Some recent visits include:
 - Barbara Glenn and Dudley Dabbs, National Association of State Departments of Agriculture (NASDA).
 - Sonny Ramaswamy and William Hoffman, NIFA (with John Wise and Rob Hedberg)
 - Maureen Whalen and Joseph Munyaneza, of USDA-ARS (with Dan Kunkel)

- Craig Beyrouly – Executive Dean University of Maryland-College
- NIFA, R, Hedberg, Call for Conservation on Tactical Sciences — A meeting was held February 15-16th in Maryland on the College Park campus for 60-70 Land Grant University System leaders, partners and stakeholders to discuss pathways to address current and anticipated pest and disease challenges facing the US agricultural enterprise, including how to deal with terrorism, bioterrorism and food safety. The conversation also asked participants to focus on the programmatic and organizational infrastructure needed to effectively address these challenges, and possible strategies for re-aligning and/or re-inventing the current NIFA Tactical Sciences Portfolio. Asking those in attendance if NIFA were to be created today, what would it consist of? If all were to pull together for a possible \$100 million for a Tactical Sciences Portfolio to protect American Agriculture, what would be identified as the core disciplines and programs? S. Ramaswamy has defined Tactical Science programs as “those that address the integrity, reliability, sustainability, and profitability of the U.S. food and agriculture system against emerging threats.” J. Baron felt this was definitely a better way to approach Congress for increased funding for agriculture programs. To unite together as a Tactical Science Portfolio, rather than a host of fragmented smaller programs. This is not consolidation 2.0. NIFA wants the programs to be the driver and walk away not protecting their own turf rather looking to build together. It may take a few years because trust takes time to build. R. Hedberg commented, among all the small programs represented, IR-4 has been the most successful. The next step will be the development of a shared vision and the publishing of a white paper.
- Path Forward Update, J. Baron
 - Indirect Cost Situation — currently in dialogue about converting IR-4 to a cooperative program in 2019 where IDC is capped at 10%. MSU is now paying its own rent, which relieves the pressure on the program there. UFL instituted a 12% IDC on grower groups but they still have to make up the difference of the balance of a 50+%. They do need to recover something. There is no imminent danger of losing support for IR-4 at UFL. D. Rossi commented that RU is going to the Responsible Cost Model asking units to pay their bills for facilities and utilities. IR-4 is already doing this, but may be asked to pay more in the future. The pressure continues to build at UC Davis as Ag Experiment Station (AES) funds have shrunk. These funds helped offset some IDC funds for Western Region IR-4. All university systems are being squeezed. In his opinion, M. Hengel stated, the AES need to restore funds to universities.
 - Lab Efficiency exercise progress — Report attached. Each lab is run differently and have different equipment. Discussed if going with one vendor to purchase lab equipment could help make the labs more efficient. M. Hengel reported that different areas of the country have different equipment service capabilities. For example California has an Agilent representative close by whereas Agilent cannot be found in the south.
 - Field Efficiency exercise progress — Report in materials. Good mix of people participating in the exercise. Some findings include:
 - Have the FDBs in the best possible shape when they leave the regional office, so the QA and SD have as little work as possible.
 - Use scanned notebooks and hold a “final copy” of the notebook at the region, posted on website is useful.
 - QC reviewers need feedback. Use of QA finding after QC check can be useful to provide such feedback.
 - Encourage regular training webinars
 - Early training for new FRDs is very important. Visiting other FRDs, pilot projects where the FDB is reviewed and comments (QC and QA) provided to the new FRD quickly is important so they can see “what they are

missing” early in the process. Access to completed FDB from other FRD is useful.

- Conference calls to discuss draft protocols are needed and will likely prevent issues later, such as deviations and protocol changes. This is critically important for new (crops) or unique protocols. Including all facets (FRD, RFC, SD and QA) is important to have input from all or to guide study conduct later.
 - Use of highlighted areas of draft protocols would be helpful, especially for new (crops) or unique protocols.
 - Getting quicker turn around on reviews of FDBs helps the FRD address issues more easily (fresh in mind). It can be problematic for the FRD to get a large number of reviews/audits back when it is the peak field season. eQA has helped.
 - Create a list of redundancies or “wordiness” in the Protocol and FDB and determine if they can be reduced. When changes are made to these documents, provide better information on “why” changes were made, which provides background to the researchers.
 - Provide direct communication to FRDs about draft protocol review. The current system is passive in some cases and protocol review maybe overlooked. Direct email to FRD or use of eDOCs would be helpful.
 - Making sure raw data is placed into the FDB or file in response to a QA audit is important and can be overlooked.
 - Other areas that we all take a fresh look at processes or procedures and where things can be improved through this process and by continual improvement as we move forward.
 - The IR-4 Operational Handbook should be updated by the end of 2017.
- Progress on new sources of funds — Some initiatives to consider: co-funding research by commodity groups, state AES help with funds for efficacy, food processors. Now have added Coco-Cola representative to CLC.
- Farm Bill discussion – A lot of dialogue as to where IR-4 should be in the Farm Bill (FB). Potentially move from being authorized to mandated. D. Rossi commented that Congress does not like mandated programs. The programs that have come from FB are usually funded around \$20-25 million. This could be a way to leap up to that level. IR-4 needs a compelling story to establish its relevance. M. Bledsoe commented that 100% of pest management tools for green houses have come through IR-4. T. Scholz agreed stating 86% of pulse pest management tools have come as a result of IR-4 research. L. Berger commented, some sources in the FB are not sustainable, i.e. grant writing for funding. The CLC will put together a “Farm Bill 101” training exercise to educate others on FB implications.

Action Item: Ask T. Humfeld and J. Keeling for a detailed discussion as to what it will take for IR-4 to be funded through the Farm Bill for the “FB 101” training session

- Public Health Pesticide Program — K. Malamud Roam reported the Zika virus is spreading in the US, however there is opposition to area-wide spraying in FL where there has been a significant increase of the virus. Funding for the PHP program will not be renewed effective September 2017. Possible options: DoD revised scope, USDA, HHS/CDC, WHO, States.

Many pest management tools for public health are being cancelled and OPs are being challenged.

- Cooperation between IR-4 and the National Association of State Department of Agriculture, B. Glenn, NASDA invited but the snow in Washington prevented this discussion from occurring.
- EPA Update, Keigwin/Goodis
 - Many changes at EPA. Almost every department has an “acting” deputy director.
 - Under court order to complete the decision-making by end of the March on chlorpyrifos.
 - Reevaluation of the risk assessment of glyphosate will be completed spring of 2017.
 - Comment on Pyrethroids has been reopened for 60 days. The EPA will only push forward those that have a statutory due date.
 - Will release acute mitigation policy and testing guidelines for pollinators
 - Strong commitment to expedite reviews for Zika tools
 - Developing a road map for EPA to use internally on issues related to antibiotics. Looking for a model on what kind of efficacy data is needed and the importance of resistance
 - PRIA reauthorization should happen in April 2017

Tuesday March 14th: 5:15 pm – 7:15 pm Reception/Mixer
Paul Schwartz received the IR-4 Hall of Fame Award.

Wednesday March 15th 7:30 am – 9:00 am & 3:30-4:00pm

- Executive Session

Wednesday March 15th 9:00 am – 4:00 pm

- Approval of minutes, new agenda items.

Motioned to accept minutes from fall 2016 PMC meeting. Approved.

- Current funding issues — IR-4 needs more money. The CLC Congressional Subcommittee put together an “Ask” document for the CLC to use on Hill visits. The language in the document requests a \$7.1 million increase with the realization that IR-4 may get some or none. Everyone is feeling the pinch of 9 years of flat funding.
- Future Funding Issues
 - Decision on Farm Bill vs. Appropriations process — The FB is not a clear path. R. Hedberg commented that no one could fault IR-4 for looking for alternative sources of funding. The Tactical Science path forward will take time to build trust. A combined program would possibly decrease administrative costs. Will IR-4 champions lobby for a larger line item of mixed programs?
 - Path Forward process enhancements
 - Alternative funds — Is AFRI a possibility?
 - Propose new efficiency exercises for 2017 (1-QA, 1-HQ) — Revisit this at July PMC meeting

ACTION ITEM: J. Wise – Include the performance budget as an agenda item for the summer PMC meeting

ACTION ITEM: J. Wise, J. Baron — put together a one page proposal (for July PMC meeting) to keep the momentum going with goals for increased efficiencies and ways to drive down costs.

- Communications — D. Rossi commented that a more focused “Ask” document should include a specific focus. One of IR-4 bringing solutions. Use the work of invasive pests and removing international trade barriers as the focus and discuss the impact on jobs, local economy and safety. Invasive pests are costing millions. IR-4 is doing ~20% more work on research studies to promote exports, this too should be included. Must state IR-4 is doing beyond what it has done in the past. IR-4 is out in the forefront. Discuss the great things IR-4 is doing now as justification for funding increase.
- J. Wise summarized the discussion: Keep the Tactical Science a priority. IR-4 should be attentive to Rob’s lead and be ready to invest time and energy on this option. He asked for consensus most agreed: L.Gu —Tactical is good. Afri is not. A. Simmons — Important to show the partner link. ARS is supportive of investing energy in Tactical Science route. ARS is very supportive of IR-4.

ACTION Item: Send a letter directly to the Chavonda Jacobs-Young requesting a meeting.

- Additional updates from
 - AAs — D. Buhler reported IR-4 is in good shape with the NRSP. Next year will be the mid-point of the 5-year NRSP funding.
 - NIFA — Waiting the Senate Confirmation of Secretary Appointee, Sonny Perdue. Budget is on a continuing resolution. Still waiting to get the RFA out. Should have it out shortly, it will have a May 1 deadline. Lost two-plant pathologist and hired a new plant pathologist, Rubella Goswami. Will be hiring a weed scientist.
 - Northeast Region — D. Rossi noted that the Ithaca site will be decommissioned this year. The Snyder Research and Extension farm has begun working on IR-4 studies. It has been a good transition. M. Ross is fully staffed at LESREC. Maryland is supportive of IR-4.
 - North Central Region, report in materials — J. Wise reported he is encourage in his meeting with companies that new products are coming down the pipeline. They have hired new field people and lab technician. These people were able to attend the National Education Conference, came back excited, and engaged. It was a good conference. It is hard to hire new folks while the more experienced people are still working due to budgets. However, the knowledge of the more experienced people needs to be shared through mentorships. They have tried different budgeting strategies in order to work this out.
 - Western Region, report in materials — M. Hengel reported they have presented an offer for the Field Coordinator position but this person needs to also have a position for his spouse. If this does not work out, they will reopen the search. The lab move has been slow. The goal is to be operational by the end of 2017.
 - Southern Region — L. Gu reported the region is moving along. Field trials have increased in 2017 with 87 scheduled up from 77 in 2016. They are moving forward as planned to decommission the Arkansas site.
 - ARS, report in materials — A. Simmons is serving as Acting Coordinator for ARS Minor Use activities with IR-4. ARS Specialty Crops National Program Leader Dr. Joseph Munyaneza (an Entomologist) has been delegated the administrative responsibility for the ARS IR-4 Program. A. Simmons reported the final budget for

ARS is expected to be announced after April 28, 2017. Sharon Benzen has been selected to receive the IR-4 National Award of Excellence. Trials are moving along. Concerned about the reduced capacity for research.

- HQ — J. Baron reported C. Palmer received SCRI grant to work on pollinator issues. She has hired a PT student to help with the Ornamental Program. HQ will be losing a student who has been working one day a week with the Biopesticide Program. There are many at HQ who will be retiring in the next few years, J. Baron has concerns regarding a succession plan. The annex is no longer being rented and the lease is going to end in 2019.
- Program update. IR-4 HQ et.al
 1. Food report in materials — D. Kunkel reported new tolerances, submissions, crop grouping, residue program history, outstanding field notebooks, and timelines.
 - a. There were 1000 uses obtained in 2016.
 - b. All crop groups have been submitted.
 - c. D. Carpenter reported there is still a backlog of uncompleted projects
 - d. V. Starner reported on the draft plans and deadlines for PCRs to be considered at the 2017 Food Use Workshop (FUW). He discussed the schedule from the FUW to the National Research Planning Meeting to be held Nov. 1-2, 2017 in Princeton, NJ.
 2. QA —T. Barkalow reported:
 - a. GLP compliance monitoring (11 in 2016 and 4 in 2017).
 - b. WSU Tri Cities Lab and UC Cooperative Extension are being decommissioned.
 - c. The spring QA meeting was held following the NEC.
 - d. The eQA system is working out well and is saving time. eDocs have been added to the system for uploading documents.
 - e. QA auditing for this year is on track.
 3. Ornamental Horticulture Program — C. Palmer reported
 - a. The Orn Hort Program is on pace for 21-22 summaries to be completed.
 - b. EPA approved Orkestra based partially on IR-4 generated crop safety data. This will impact 532 crops.
 - c. An online system has been developed for researchers to select trials for the next research year. The online system has other desirable features such as generating automatic emails, allows for the ability to delete trials after submission, and has an efficacy module where researchers can select projects.
 - d. The CWR project was completed.
 - e. The Boxwood Blight and Impatiens Downy Mildew projects have been successful collaborations.
 - f. Held a Downy Mildew Workshop in November 2016.
 4. Biopesticide and Organic Support, report in materials — M. Braverman reported
 - a. Lifeguard, a biological plant activator was registered
 - b. Registration packages were submitted for *Aspergillus Flavus* AF36 on cotton, corn and pistachio
M. Braverman has been approached to provide registration assistance for Nobactra and *Pseudomonas syringae* G10. This would involve his time. Some discussion focused on this needing to be coming from the public. EPA requires this is being done in as a public process. A direct request for assistance might be criticized. There needs to be more discussion about this process.

ACTION ITEM: The PMC would like to receive a public sector letter of assistance sent to voting members.

MOTION: To approve M. Braverman to provide assistance for Nobactra and *Pseudomonas syringae* G10 projects. Approved

5. Communications — S. Novack reported
 - a. Brochures, posters, YES and other marketing materials are being created.
 - b. The website redesign is now focused on getting RU communications involved.
 - c. S. Novack was encouraged to post more to facebook using stories and antidotes not necessarily related to IR-4
 6. International Activities report in materials — D. Kunkel reported
 - a. GMUS 3 Scheduled for October 1-4, 2017 in Montreal, Quebec, Canada. The program will discuss technical cooperation areas and policy considerations
 - b. IR-4 received new TASC request (\$350,000) to enhance data sets to satisfy international data requirements.
 - c. There were considerable submission to JMPR for 2017 and the 2016 submissions are being coordinated with MFG.
 - d. Updated on STDF projects: those submitted, in review and completed
- ACAC report in materials — M. Hengel reported
 - There are 45 late ASRs and 30 projects on backlog
 - He feels he needs strong support from the PMC to help him in obtaining ASR numbers from lab directors.
 - Should labs be penalized for late work?
 - Report on National Education Conference report in materials — V. Starner reported
 - Attendees were engaged and energized
 - Kudos to the organizers
 - Presentations were fun, educational and compelling
 - Should IR-4 continue with this meeting every 3 years? PMC agreed the meeting is valuable and should continue.
 - Some NEC committee members will be rotate off the committee. S. Erhardt will replace M. Hengel, and Michael Chen will replace M. Beran.
 - Proposed process to identify primary registrant — J. Baron reported, this was triggered by a project on oxytetracycline on cherry where two companies with same AI wanted IR-4 to do research. The two companies did not work well together and it reflected badly on IR-4 and money was lost on research.
 - Questions included: What happens if a non-discloser document is signed? Is this intellectual property? Is IR-4 serving the growers need? Is this public information under Freedom of Information Act?

ACTION Item: J. Baron — write a formal policy regarding secondary registrants who seek IR-4 assistance for the same AI as primary registrant, send to PMC for comment, then arrange for RU legal assistance to review the proposal.

- **Upcoming Meetings**
2017 Summer IR-4 PMC/CLC Meeting
12,13, 14 (ag tour)
Philadelphia, PA

2017 Food Use Workshop

September 20-21

Denver, CO

GMUS-3

October 1-4, 2017

Montreal, Quebec, Canada

2017 Ornamental Horticulture Workshop

October 17 (tour)

October 18-19 priority setting

San Diego, CA

Fall PMC

October 30-31

Princeton, NJ

NRPM

November 1-2, 2017

Princeton, NJ

Evaluation and efficiency improvement for IR-4 analytical labs

Report to PMC, March 13, 2017

Committee: Liwei Gu, John Wise, Matt Hengel, Debbie Carpenter

Background: This task was recommended and approved by PMC during the 2016 fall meeting.

Targets

- Improve analytical labs' throughput by 20% over a baseline of 2013-16 average
- Eliminate sample backlog by the end of 2018

Format and deadlines (see page 4)

Current labs and capacity

IR-4 labs	Number of analytical chemists*	Major instruments (only GC-MS and LC-MS/MS are listed)
Western regional	4.0	GC-MS: Agilent 6890-5973N purchased in 2000 Agilent 6890-5975 purchased in 2005 LC-MS/MS: API-2000 purchased in 2000, will retire within 6 month Agilent 6410 purchased in 2007, upgraded to 6410B to 2010 Agilent 6430 purchased in 2009 Agilent 6460 purchased in 2015
Southern regional	6.0	GC-MS: HP6890, purchased in 1999 HP6890, purchased in 1999 LC-MS/MS: Thermo –TSQ Quantum Ultra, purchased in 2006 Thermo TSQ Quantum Access Max, purchased in 2010 Thermo TSQ Quantiva, purchased in 2014
North Central	5.7	GC-MS: Agilent 6890 w/ 5973 MSD, Purchase 2005 LC-MS/MS: Waters UPLC w/ Micromass MS, 2007 Agilent 1200 SL w/ 6460 with JetStream, 2010 Thermo TSQ Endura + Ultimate 3000 UHPLC, 2015
ARS Wapato	3.0	GC-MS: Agilent 7890 GC w/ 5977 MSD installed 2015 LC-MS/MS: Agilent 1200 w/ 6460; purchased 2011
ARS Tifton	3.0 (1.0 temporary)	GC-MS: Agilent 6890 GC w/ 5973 MS installed 2000 LC-MS/MS: Thermo TSQ Quantum Ultra LC/MS/MS installed 2011

*Lab director excluded

Progress:

- Step 1 (brainstorming in each IR-4 lab) was finished. Targeted and open-ended questions were discussed and answered. Reports was submitted to committee a week prior to national educational meeting. Reports were shared among all five labs.
- A roundtable discussion was held on March 2, 2017 during the national education meeting. Lab directors discussed questions and strategies for improvement. Lab directors were given a week to revise report to

include an action plan for improvement, bench marks for evaluation, list of lab personnel, and a list of major analytical instruments.

- Revised reports from all five IR-4 analytical labs are attached. Step 2 (reporting to PMC) is completed.
- Next step (step 3), lab directors will carry out their action plans. Debbie Carpenter will inspect each analytical lab. She will provide reports and recommendations to PMC by July 15, 2017.

Summary of consensus:

- #1: Method development/adaption is the most time consuming activities in the lab. After a method is developed, evaporation and reflux are the rate-limiting steps for routine analysis. This is attributed to the limited number of evaporation/reflux devices and limited hood spaces (Evaporation and reflux have to be in fume hoods).
- #2: Direct communications among chemists in different labs are lacking. It should be encouraged and facilitated.
- #3: Instrument downtime and number of samples per set/week vary considerably depending on the pesticide and food matrix.

These consensus were agreed by lab directors in Orlando during roundtable discussion.

Summary of specific challenges in each lab:

Each of the five IR-4 lab operates differently. Each lab has specific challenges in addition to the common ones.

- West regional lab (Matt Hengel) reported that the rate-limiting step in sample analysis is evaporation on turboVap systems and sometimes long chromatography run time. A dedicated person in western lab write all ASR (analytical summary report) using established templates while others focus on analytical work.
- North central lab (Susan Erhardt) reported that one of three LC/MS/MS in her lab was used intermittently (meaning long idle time) while the other two were used continuously. A rate-limiting step is the reflux because there are limited fume hood space for additional reflux units. Susan suggested that the ASR reporting templates in western lab be shared among all labs.
- Southern regional lab (Wlodek Borejsza-Wysocki) reported that the time-consuming samples are those requiring special handling procedures, unusual glassware; blending or evaporation. Wlodek suggested the creation of interregional database with information for difficult chemicals and commodities. The possibility of reducing duplicate injections to single injection on LC/MS was discussed and rejected.
- ARS Wapato lab (Todd Wixson) reported that the rate-limiting operations are evaporation and reflux due to the lack of fume hood space and frequent breakdown of aged evaporation/reflex units. He suggested better project planning and assignment to avoid each lab's weakness.

- ARS Tifton lab (Tom Hendricks) reported that they spend a lot of time chopping samples for some difficult matrix such as Avocado. Nearly all assigned projects require LC/MS/MS. They only have one such system.

Point of discussion/dispute:

- Debbie Carpenter suggested to separate method development from routine analysis. Have senior and PhD level chemists to develop methods, while have junior chemists do routine analyses. Lab directors do not have a consensus on this suggestion and prefer this to be delayed because a drastic change in lab interrupt current workflow and may add backlog in a short term.

Summary of action plan:

- West regional lab – implement all three suggested strategies for efficiency improvement; After lab relocation, they will retire the API-2000 LC/MS/MS and look to purchase a replacement for the aging Agilent 6410 LC/MS/MS system
- North central lab – Increase the numbers of field trials to be completed on each LC/MS/MS to at least 40 field trials per year within 1 year; Obtain additional help in method development on a timely basis within six month; Improve Analytical Summary Report generation through-put - minimum 20 reports per year.
- Southern regional lab – increase number of extracted samples per day or combined samples from 2-3 extractions in one sequence; Run the longer sequence with larger number of samples during the weekend; Install column switching system in the LC/MS/MS to be able to analyze, on the same instrument, samples for different projects/chemicals.
- ARS Wapato lab – streamline method development/adaptation; improve project planning; increase reflux/vacuum/evaporation capacity. Plan is very detailed.
- ARS Tifton lab - purchase more evaporation equipment by the end of the fiscal year

Evaluation and efficiency improvement plans for IR-4 analytical labs

Format and deadlines

Step 1– Individual brain storming: each analytical chemist will identify three or more areas of improvements and provide additional three suggestions for efficiency improvement by Feb 15, 2017. Targeted questions and open-ended questions will be answered (see below).

Targeted questions.

1. Within the normal sequence of sample analysis, what duration of time do various analytical equipment stand idle in a day? How could adjustments to operators, supplies or process assure full utilization of equipment and achieve the highest productivity?
2. Which steps of an analytical project would you consider the rate-limiting or the most time-consuming steps?
3. Typically, how many projects do you work on concurrently? For example, do you only work on one project at a time, or do you work on multiple projects by helping other analysts with more labor intensive procedures?
4. How many samples are in a typical analytical set (e.g. controls, concurrent fortifications and treated samples) and how many analytical sets do you run in a week?
5. How often do you evaluate an extraction or cleanup procedure for process improvements (e.g. reduce sample size to fit into smaller extraction tubes to minimize the use of larger glassware which requires washing; or changing from liquid/liquid partition to SPE)?

Open-ended questions

- Please identify three or more areas of improvement in the analytical lab
- Please provide three or more suggestions for efficiency improvement

Step 2– Lab group discussion and decisions: All analytical chemists in each lab will meet to identify and rank the top 3-5 areas of improvement. For each area of improvement, an action plan will be designed to include a timeline of implementation and an evaluation bench mark. A report will be submitted by lab directors to PMC by March 15, 2017. Reports will be reviewed at the spring PMC meeting.

Step 3– External inspection and recommendation: Debbie Carpenter will inspect each analytical lab. She will provide reports and recommendations to PMC by July 15, 2017. Results will be reviewed at the summer PMC meeting.