**Notes for:**

**MNTeSIG/MNT-EC Professional Development Sub-Group Meeting**

**9-17-2020**

* Meeting Attendees:  Ozgur Cakmak, Jared Ashcroft, Gary Mullett, Ter Kuzma, Jim Smith, Pete Raynor, Abdelaali Fargi, Abe Michelen, Nancy Louwagie, Billie Copley, Deb Newberry, Daniel Kainer, Vimla Chopra, Renee Lindenberg, Bob Ehrmann  NOTE: Brandon Rodriguez and Wes Sanders missed the meeting due to time zone confusion.
* Merging the MNT Professional Development Sub-Teams (eSIG with EC):
  + Reviewed MNTeSIG Sub-Group to Date most recent objectives (created in 2019)

§  Identify current professional development opportunities

§  Anticipate future professional development needs

§  Propose new professional development activities

§  Develop strategies to help faculty learn of these activities

§  Coordinate national professional development

* + Review MNT-EC PD Objectives (from MNT-EC proposal)
    - The stated objective is to help to identify, disseminate as well as to deliver professional development (as appropriate) to enhance knowledge, skills, and abilities so that faculty will integrate existing as well as new information  about MNT techniques and trends into courses and programs.
  + Reviewed Activities from the MNT-EC Proposal:  (Awarded July 1, 2020)
    - **Activity 2.1****Facilitate MNT faculty workshops and professional conferences**Deliver professional development opportunities for faculty in micro nano technical education. **Implementation:**Support MNTeSIG Conference and Special Interest Group, leadership meeting at ATE PI Conference and collaborative conferences alongside NSF ATE Centers, such as InnovATEBIO National Biotechnology Education Center. ***Deliverable/Outcome:***Provide professional development to 250 MNT educators per year.
    - **Activity 2.2****Organize hands-on laboratory education**Community and Technical College faculty will attend hands-on laboratory workshops aimed at incorporating micro nano technical education at their campuses. **Implementation:**Deliver hands-on workshops at multiple MNT partner sites to eliminate the need for travel by participants (See Table 4, Scope of Work). ***Deliverable/Outcome:*** Host short course hands on experiences with 100 Community and Technical College faculty per year enrolling in intensive laboratory practices, synthesis and characterization workshops.
  + **Decision**on MNT (eSIG-EC) Professional Development Sub-team Objectives
    - After some discussion it was determined that the objectives were consistent and the sub-team decided to utilize the objectives and activities reviewed above for this newly formed combined group.

* Reviewed some Organizational for this group
  + Need someone who is a good note taker to assist Jim and Bob who will lead the meetings.  No one as of yet has volunteered.  **Action:**  If you are interested in helping out, please contact Jim or Bob
  + Website Keeper / Creator – Billie Copley volunteered to get this team’s web presence up and running on MNTeSIG site as well as for the coming MNT-EC site.  Thanks Billie!
  + Team Meeting frequency – Bob  proposed that every 4-5 weeks at least for the fall 2020 would be appropriate.    This will allow 4 large team meetings between now and the end of the year. ( Sept, Oct, Nov and Dec)
    - Task forces / working groups will be formed as appropriate to work on specific projects / issues / initiatives as appropriate.  Members/leaders of task forces will be responsible for reporting out on progress in monthly MNT PD sub-team meetings.
  + **ACTION**: Bob will schedule next MNT (eSIG-EC) PD Subgroup Meeting on Oct 15 at 4 PM EDT

* Reviewed, discussed/critiqued some upcoming MNT PD Offerings:
  + **Webinars**– NACK will continue to hold MNT webinars in the coming 2020-21 year.
    - The first webinar will be held in October or November and will feature Remote Access (the RAIN Network).
    - **ACTION:**  Bob, Ozgur and RAIN Team need to organize and advertise this webinar

* + **NACK/NPDP Training** Discussion–
    - Feedback / Brainstorming on how to redesign “NPDP” for 2021 –
    - Situation:  PSU CNEU has been holding MNT PD for many years- first F2F and most recently via an NSF ATE Project grant entitled the Nanotechnology Professional Development Partnership (NPDP) with a combination of Live Stream trainings 4 Friday – 4-5 hour sessions for Intro to Nano, 2 sets of 4 Friday (10 sessions in total) 4-5 hour sessions for Nanotechnology Curriculum Workshops AND summer 2-3 day Hands-On Site Workshops at MNT Partners across the country.
    - Opportunity:  The newly renewed NACK Support Center is reintegrating professional development into the Center’s scope of work.   This team was asked to provide feedback on the most recent NACK NPDP as well as constructive suggestions to be taken back to the NACK PD Task Force.
    - Discussion and Feedback:
      * To gain participants rolling advertisements of upcoming events could be done at the beginnings of our MNT-EC, RAIN, Sub-Group etc. meetings
      * Sessions were really long
      * What was covered in the intro workshop was way more than intro to nano.
      * Concerned that an inexperienced person would have been turned off by the quantity and level of the material covered.
      * How this is redesigned really depends on who the target audience is
      * Can’t do 4 to 5 hour workshops.  This way too long.
      * Commitment of 4, 8 or 12 Fridays is way too much to ask and is not practical for most educators
      * Way more content was covered in NPDP than most instructors actually need or want
      * Some instructors want a deep dive into the material but the perception was that many attendees  want to know how to effectively teach MNT.     What is the secret sauce?
      * Suggestion made to flip the PD classroom – make the PD a combination of asynchronous videos and synchronous sessions.
      * Suggestion made to create  short (no more than 10 minute) topical videos to cover the main points
      * Deeper dive 45-60 minute videos could also be created or edited and posted from NACK’s extensive PD library
      * Have office hours of 2 hours where PD participants come and ask questions about the videos.  Instructors can then elaborate by reviewing particular topic areas.
      * Have attendees attend the PD over a 10 month period
      * Get students involved and attending as appropriate
      * MIT has a nice model that we might consider following
      * RTNN has an Intro to Nano course on Coursera that we might consider benchmarking
      * Hands-On Site Workshops have been a carrot for NPDP participants.  In discussion on how now to select Hands-On Site participants moving forward, suggestions were made to utilize digital badging.   Participants could pick and choose the topics that are of the most interest to them and criteria could be set as to how to select participants for Hands-On Site Workshop Attendance based upon their digital badge attainment performance.
      * Summary:  Proposed structure of future Asynch/Synch PD formats.  Short 10 minute presentations introducing topics, with reference to the full 1 hour videos.  Place videos in playlists on youtube.  Create badges that can be earned by trainees watching a certain number of videos and completing some type of assessment.  A certain # and sequence of badges can qualify as pre-requisites for a hands-on experience.  Supplementary zoom meetings held for trainees to ask questions etc.  Possible tasks include, editing existing videos to create intro videos, sectioning the videos to access particular content.  Organizing the youtube channel.
      * Suggestion made to make sure that intended audience is clear.
    - **ACTION** Moving Forward: Jim Smith and Vimla Chopra will join the NACK team to develop the plan for next steps.  Bob will convene this NACK PD Task Force in the next 2-3 weeks.

* + - **Possible Fall 2020 - Lab Training**  -  CNEU may hold Fall 2020 PD Lab trainings if funding can be effectively reallocated from NPDP partners.

* Other MNT PD opportunities

·         **Listing and Vetting MNT PD:**   During the NACK discussion, other MNT PD’s that are available were discussed (ie MIT and RTNN)  Discussion was started this MNT PD subgroup that this team could assist the MNT community in their knowledge of these opportunities. The first steps might   be to create two lists, one of all possible PD opportunities including courses on Coursera, EdEx, MIT Opencourse etc.  A second list of vetted materials.  Create tasks for volunteers to vet these materials, create a synopsis according to a rubric, and then report out about them.  These can be curated on our webpage, and possibly shared in appropriate newsletters, mailing lists, and professional groups.  NOTE: Deb Newberry is doing an evaluation Rubric for the curriculum team, maybe we could adapt that for our tasks.

·         **ACTION:**There was good energy in the group about this idea, so we will add this to the agenda for future meeting(s?) to flesh this out further.   It may result in a break-out task force.

·         **K-12 PD** – not discussed

* Upcoming MNT Related Events :
  + ATE PI Conference – week of October 19
  + COMS Conference – week of October 19
  + NACK Webinar – RAIN Focused ?  (Timing TBD)

* Future Discussion Items or Perhaps Task Force Work:
  + MNT Program Development case studies – 2yr Eng Tech –
  + PD for Uptime technicians training and Cert –   SEMI Certs  -  **ACTON:**  Abe Michelen will lead this discussion in the next meeting of this group on Oct 15.   NOTE:  A SEMI Certs webinar will be held in the spring of 2021
* NEXT MNT (eSIG-EC) PD Subgroup Meeting for Calendars:
  + Thursday October 15 @ 4 PM  EDT – **ACTION:**   mark your calendars.