A good team must have strong communication, team spirit (melding) and tenacious drive.  Add these ingredients to great cyber skills and a winning team is created.  I incorporated into my tips valuable input and suggestions from two of my wonderful C.P. III mothers, Perri Riseman and Barbara Dovi, as well as last year's team captain, Josh Dovi and this year's team captain, Isaac Harding plus Shawn Wilson, assistant team captain.  Gary Palmer, our visionary, committed I.T. mentor's technical tips are also posted.  I want to give grateful recognition to MITRE that donated their used computers to our team (one man's junk is another man's treasure) and my group 4 commander, Dave Littlefield, Maj. CAP, for his support to upgrade those computers and overall to cadets as well as the rest of my wonderful C.P. III parents and my assistant coach, Mark Strobridge, Lt. CAP.  Implementing a C.P. team is indeed a cooperative effort.

My comprehensive, chronicling list is my (& my family's) gift of time given in the hopes it will truly be beneficial to future CyberPatriot coaches, their I.T. mentors and team captains especially to save some time and encourage more volunteer coaches as many hands make light work.  CyberPatriot does positively influence our young adults in good choices in S.T.E.M. as well as cyber security.  One of my cadets with limited computer knowledge but with a desire to major in audio engineering happened to join our team because his friends did.  The CyberPatriot competition was so exciting and motivational that he is considering a career in cyber security, a field he did not think of before.  Another team cadet became more assertive with not letting a learning disability get in the way of his life goals which includes cyber security; another is applying for the Air Force Academy and another cadet of mine matured so much by the end of the competition.

Anecdotally, during a telephone conference with C.P. education director, Mr. Lesley and the 12 semi final coaches, one coach remarked that his cadets came into the competition with limited computer knowledge, basically at square one.  They spent 30 hours a week training (50 hrs during Thanksgiving week).  He wondered if these efforts were normal as he was hearing that other teams were meeting once a week on average.  We spent much time training both as a team and individually for the competition but generally we did meet once a week.  Later I realized my 'fluent set' actually did spend numerous hours training as they were growing up.  That team was on track spending that amount of time required for this type of competition.  The first time my team spent less time training was when we were at the D.C. finals.

Even though I am not fluent in computer'ese', I can see when the cadets start melding which was one of my rewards.  As in the game of volleyball, my job is setting things up so my cadets (my husband and our children as well) can 'spike the ball' which eventually contributes to maturing, self governing cadets (& for me later well behaved, happy grandchildren ;) and overall makes for a stronger, safer nation.  To all future fellow CyberPatriot coaches, 'happy setting' and intense cheering when your cadets 'spike the ball'!

**Cyber Skills:**

- Demand measured timelines and trials.  This accountability required by my I.T. mentor is when those in my 'basic set' brought up their individual skill level.  Everyone on the team must do their 'homework' including the alternate(s).

- Those new at cyber security need to practice on a spare computer, *not* their family or personal computers, which can have valuable information or homework that might be damaged or lost.

- The cadets *must develop a checklist/script* (a competition backbone) and save them each year.  Have your cadets learn how to write up *strong trouble tickets* which is important. One of our C.P. mothers, Dee

Hamrick, taught our team since she used it much in her field plus they read up on it and what Gary Palmer shared with them.

- Obtain as much experience as possible.  This can be accomplished through helping others with debugging their computer and would be tackled after working on the spare and gaining basic skills.  Enter as many online cyber security competitions as often as you are able.  One resource for that is http://workforce.cisecurity.org.  An excellent tutorial on Unix/Linux is www.dvdxdvd.com.  From Josh Dovi: **"Use tutorials that the team members can review together with the IT Mentor.  Our team did this with UBUNTU and it helped the team to overcome any concerns or fears as well as helped us to understand more thoroughly the system."**

- Build on experience.  If possible, have the competition experienced team members continue on together.  If they are not competing that year, bring them on as advisors as schedules allow.

- Grade and rank become irrelevant.  It is experience which is the qualification for positions on the team.  However those with more leadership training can encourage their cyber security savvy captain in this area and those team captains would be wise to listen to those cadet(s) advice on leadership.  Each year, logistics or other factors may require changes to the team captain position.

- When done with online competitions, keep the VM's so that anything missed can be reviewed, new knowledge gained and\or reinforced.

- Cadets must do their homework under the direction of their I.T. mentor plus research and learn on their own.  This includes, but is not limited to Windows updates, I.P. tables, antivirus systems and operating systems.  The mentor will review these items during practices.  Teammates can also tutor each other on these topics and their own individual cyber strengths between practices.  The I.T. mentor has each cadet present their assigned homework and their forte at practices.  Basics must be drilled and trained in to create a foundation so as not to impede creative and more advanced analysis.  Josh's two cents:  **"A transition took place with our team when it went from Cadet led to IT Mentor led with great success.  There can only be one person in charge in teaching the team and that is the IT Mentor.  Given the ages and maturity level of the cadets on our team it is really the responsibility of the Team Captain /Co Captain or fluent cadets not to direct the team but to assist the IT Mentor who directs the team.  Though we had two cadets with prior competition experience each competition year was different with OS and the objectives.  The IT Mentor has the work and background experience to challenge, direct, organize, encourage and promote cooperation in the many practice sessions and all aspects of this challenging event.**

  **It is the IT Mentor who looks at the level of skill each cadet brings to the table.  He directs the Captain/co-Captain or fluent cadets in what to instruct and in helping the other cadets to bring the team to the level of having at least the basic skills.  Then the IT Mentor moved our team up to the next level all along assigning work, research and study time.  It is imperative for a successful team to have the IT Mentor the leader and the cadets be the support to the Mentor and each other by doing their assignments and research.  Only through a structured practice can the IT Mentor and cadets experience the freedom to accomplish the tasks and bring out and use our creative ideas and skills for the benefit of the team.  For our team what worked well was when the IT Mentor assigned specific assignments to us and we went home and did our research and then gave a report to the group on what we learned about the subject.  We gained self-confidence, understanding of the material, raised questions for further explanation and we walked away with hands on experience.  It gave Mr. Palmer an idea of our weaknesses and strengths."**

- Whenever possible the coach sits in on practices regardless of computer literacy.  It is an opportunity for the coach to learn the jargon, the framework of cyber security, miscellaneous knowledge and contributes to

the team building process while working on team matters.  The coach should copy or take pictures of the notes made by the mentor and the team or delegate that task responsibly.  Our I.T. mentor took pictures of the notes, typed them up then emailed them out to our cadets.  This information can be organized and distributed.  If on occasion, the coach is not available, a secondary/assistant coach should be available.

- On VMware, it could be a good training tool if there are no hard and software issues along used to host a virtual o.s. for practice.  This was Josh's twenty cents from his experience with a brief use of VMware: **"On our own to create VM's with pre-existing problems proved to be a waste of time, resources and energy and it ended up not working for the team.  The purpose of VM is to help familiarize the team members with multiple operating systems without installing them individually on each computer as their host operating system."**

- Thrift stores and libraries are good resources for computer and cyber security materials.

- Definitely document and type up your online competitions, the cadets help with this esp. the fluent set.

**Communications:**

- One of your jobs as coach is to scout out and head off the potential problems in all areas that would affect your cadets competing as much as possible.  Be assertive about that nicely and wisely.  Coaches need to network and scout out among team, families, friends and affiliations for computers, I.T. mentors, places to practice and compete, dry erase boards, portable table, projector, cooler, lunch run, etc.

- Another objective as a coach is to have your cadets self sufficient by the time they reach third online competition as far as you can; crawl, walk and run.

- Read thoroughly at the start of volunteering as coach (or before) the F.A.Q.'s on A.F.A.'s CyberPatriot website making notes and promptly email their helpful staff any questions or clarifications you may have – www.info@uscyberpatriot.org.

- Redundancy in all areas is a must for this kind of competition.  You must have backup computers and equipment (some will unexpectedly crash), secondary coach (emergencies, etc.) secondary site for practices and competitions (if internet or electricity becomes unavailable at the primary location; weather concerns, etc.)

- You may end up with a few I.T. mentors that will teach in their area of specialty.  However keep the training under a main I.T. mentor if at all possible and all your cadets assist him/her.  I. T. mentor(s) are one side of the track and your parents are the other side to keep your cadets on track, you are the engine and your secondary adult is the caboose, your commanders in your chain of command are your support.

- Obtain parental permission, emailed in, from the beginning as well as their young adult's information, i.e. cadet's name, grade/rank, school grade, graduation date, cadet and parent contact info.

- Inform the cadets and parents up front that there is a time commitment.  After school, homework, chores, CAP (R.O.T.C. or after school activities), part time jobs, helping neighbors, any sports, etc. means a cadet will have limited time for all activities thus the necessity for commitment to the C.P. team time frame.

- After parental permission (above) has been received, communicate in writing:
  - *all* competition dates through nationals.

    - tentative practices dates, noting that practices are contingent on the mentor's schedule (Friday evenings were a winner with our team).
    - rules\expectations noting that changes might be made.
    - items of which to be aware of such as homework assignments and tips.

- The time before each competition, more than likely, there will be at least one more extra practice so be sure to note that in your schedule handout and email. For the few times you need to have an extra practice before competition, if approved by your commander, have it on the same evening as your cadet meeting which worked well for our team as not an additional school evening out. Make sure your cadets wear same uniform as rest of the unit cadets, be unobtrusive and your cadets participate in the meeting as needed.

- Occasionally, for various reasons, a cadet has to drop off the team.  The experience, however brief, is a constructive influence.  As parents and coaches, we strive to help our children/cadets become self governing and self sufficient.  The coach is like a grandparent as there is opportunity for good influence and the kids go back to their parents at the end of the day.

- If you have the good fortune of having the commitment and heart of an I.T. mentor, parents and cadets must understand that practices will be largely dependent on the mentor's schedule and it is they who will need to be flexible.

- For a CAP team, a CAP adult member must be present at all times.  If the I.T. mentor is a CAP member, problem solved plus the coach will still be present as well.

- If the I.T. mentor is not also the coach, they also must cc you and the parents when assigning homework or on any other correspondence.  The coach always cc's the parents, assistant coach and I.T. mentor when emailing the cadets.  Unit commander needs to be apprised of scheduled events but do not necessarily need or want every minutia.

- Have the parents and cadets follow the chain of communication.  With the exception of scheduling rides and teammate support, all communications should go through the coach.

- Depending on how you operate and your team, you may want to limit one subject to each email.  However because of memory and time, I had to list several C.P. items together.  Although sharing befitting personal bits of your life can contribute to building rapport with your parents and vice versa, keep in mind if in C.P. emails, some will find that distracting and there is a risk that some C.P. info could be overlooked.  Also I suggest that a hard copy of information be provided to ensure receipt handed to parents at drop off or pick up.  Here is Barbara Dovi's perspective as a parent:  **"In the beginning of the team coming together it would be important after discussion with parents and IT Mentor and Coach that a schedule be made up of practice dates and times and handed out to everyone.  Keeping in mind the Holidays as well.  Do this whether the team advances after the second round or not because a schedule can be adjusted.  This gives everyone concerned a heads up with a plan already in place."**

- If at all possible, have several dry erase boards and a projector handy at the practice site.  Respect the site.  Follow all housekeeping rules and time schedules.

- Instruct your cadets to keep all their notes and handouts in a three ring binder which is to be brought with them to all practices and competitions.

- At the online competitions, group the o.s. by similarity; for example do not place Linux between two Windows systems. Pair the less experienced individuals with the more experienced teammate, the more pair of eyes, the better; again grade or age is not the factor here keeping in mind good personality matches. Some teams during online competitions prefer low lights (bat like atmosphere), the coach will still have to have a reading light somewhere close by in same room.

- Treat the practices like the competitions - no game playing, no horsing around, eating over the computers and keep covered drinks away from keyboards. Cell phones, ipods, etc. should be put on SILENT, *not vibration or off* and put in a bin during practice to minimize distractions. If a call is expected, provide the coaches the contact number. Here is Barbara Dovi's perspective on this subject also: **"From a parent who attended the practices up to the semi-finals, I found that there were too many times the above devices were being brought to practice. For our team they were a huge distraction. I suggest that it be made a rule from the beginning that all cadets not bring them into the practice room or they would not be allowed to participate at practice. Because the cadets are being asked to participate for a two hour practice time; the cadets need to be attentive, practice self-discipline, honor and respect the time that the parents, coaches, IT Mentor and other cadets are putting forth for the team to succeed in the competition. After practice they can talk about their likes and dislikes, show their tech equipment and discuss their experiences."**

- When parents carpool to practices (which they will work out on their own) it lightens the time load and provides an opportunity for parents to meet. It also strengthens the team bond.

- From Josh Dovi: **Keep a digital team scrapbook from the beginning of the new team. This would be a project that one or two of the team parents can do.** Shutterfly.com and other similar sites can be helpful organizing and sharing personal pictures.

- If you have a mascot, make sure it does not impede the cadets' view of the screens or distract them. Ours was the Wilson soccer ball and last year I saw a team had a cute stuffed toy penguin attached/placed to one of their screens at their table. Like the nickname, it can add some personality.

- Meaningful quotes and songs can be emailed out to inspire your cadets and printed on your handouts even bring posters of them to practice if you have them. My quotes were "Perservance: There is no substitute for hard work." by Thomas Alva Edison and "Teamwork: Coming together is a beginning, keeping together is progress, working together is success." by Henry Ford. The song that reminded me of finally seeing our cadets' teamwork coming together over the winter months was Escala's 'Palliadio' when they first competed on 'Britain's Got Talent' and won! You can see them on www.escalamusic.com. Their persevering hard work and teamwork is now making great music together and a living.

- Under www.uscyberpatriot.org, there is a link for 'My Teams'. This can be set up with dates and announcements by the coach for your cadets and parents to check into.

- Josh Dovi's suggestion: **If the teams created a Fan Page that would promote CyberPatriot and encourage others to participate.**

- Josh Dovi's suggestion: **Use a software program like "Go to Meeting" for conference calls with a power point presentation on specific topics when schedules are tight.** Shawn Wilson's suggestion: **Schedule Skype meetings or the like once a week such as on Wednesdays as saves the parents' gas and time in addition to in person practices.**

- When asked for information on your team, provide team info at the time of current competition.

- While at nationals, limit Mountain Dew and Monster to the competition generally.  Keep your immune system up and encourage your cadets to do the same.  Found Airborne helpful for me.  Similarly have hand sanitizer near the keyboards and encourage its use; wipe down the keyboards, mouse and practice table before practice.

- Have your cadets double check their packing list with parent oversight.  While we encourage our young adults to take responsibility, oversights happen and a second pair of eyes is always useful.  If you travel to nationals, coordinate with each travelling parent to bring a part of the competition uniform and shoes as backup and/or bring an extra set.  A portable sewing kit is smart.  The Gaylord has a seamstress\tailor available as well as dry cleaning service.

- If the two #1 teams are again invited to a gala, coaches are required to wear appropriate attire - cocktail dress or formal suit\tuxedo - which can be useful also for future weddings and such occasions.

- Also for D.C. area for CAP whether senior or sponsor member, you must be in uniform at official events.  CAP publication M39-1 Uniform Manual pg 7 & 74 are an informative resource and Rita and other personnel at CAP HQ were helpful.  My cadets were asked to wear the A.F. blue jacket so they would match (it is not required in accordance with M39-1 for CAP cadets in D.C. area on pg 7).

- When at the gala and banquets, take plenty of pictures on personal camera(s), assign the attending secondary adult/parent(s) that task and/or have taken by the professional photographers.  Some shots not to miss are team pictures, parent with their cadet child, the C.P. commissioner with the whole team and the two adults as good for memories.  There were two professional photographers at the gala we attended.

- The secondary adult will be busy especially at nationals assisting you, distributing subjects to research, coordinating uniform needs, herding the cadets to meals and bed, tracking medical needs, picture taking, video journaling, etc.  My other adult and I made sure our cadets were settled down by 2230, some were already crashed however my team captain and his assistant did stay up to 0130 working on I.P. tables before the semi finals.

- By their choice, my cadets researched and strategized both evenings before semi finals with only a bit of swimming the second evening which proved beneficial and they came back by agreed time.  After the competition, then they swam and relaxed much.  Have the team use the time available for additional research, strategizing, school homework and rest the evenings before competition.

- Delegate typing up script, packing list, picture taking, co-op article writing, etc. but you still supervise.

- National competition is held concurrently as Cyber Futures (so far) then realize that the cadets can sit in the workshops if accompanied by a team adult and well behaved.  That is a nifty opportunity of information and expanding their perspective.

- Preprint passwords prior to the competitions and ensure the team has this information in hand before entering the competition room.  Operating systems may shift a bit among the cadets (they do figure it out before the competition) so each cadet's password sheets should be color coded (highlighted) for each system with the operating systems penciled in.

- On operating systems shifting before competition and at the competition table among the cadets, do not panic or become uptight about it.  As reality hits the night before the competition, the cadets become more

realistic about what they can handle (as well as the prior immediate practices).  They do figure it out on their own (our I.T. mentor was not there during that time and others' input is not needed) however his written prior assigned o.s. list proved grounding and the change was minimal.  Your job is to gently supervise with minimal input (but not abdicate your oversight) during this delicate time hence the pencil.

**Team Building:**

- Coaches should be mindful that schedules, preferences and personalities need to be thoughtfully navigated.  While the coach is in charge, he\she must be open to the opinions, advice, feedback, insights, logistics of the parents and the cadets (out of the mouths of babes…).  Generally it keeps the peace and provides perspectives which can facilitate managing the team.

- Stress the importance of respecting their I.T. mentor's time (and their parents' time as well) that would include paying attention at practices.  It is not just the coach and the fluent set putting in late nights, it will also be the mentor.  The team is fortunate to have this person who gathers together and provides copies of training & research materials, possibly taking away time from their families and jobs.  The coach, the mentor, the cadets and the parents make the team.  Together they form a training regimen.

- Common characteristics of qualified fluent cadets I have noticed are a passion for cyber security (else they may consider it to be necessary but boring), raised with at least one computer parent and have bit of protector warrior mentality.

- For us, Friday practices worked the best and enabled the team to have downtime together afterward at a nearby Chick-a-Fillet with a Friday $3 shake/sandwich combo deal.  Parents did *not* like practices on school nights.  Here is Barbara Dovi's perspective on this subject:  **"It took two parents, the coach and IT Mentor a few minutes of discussion at a Wednesday practice to realize it was not working out for anyone mainly because it was a school night and the middle of a work week for the IT Mentor. One of the fathers suggested Friday night practices and it was a success with consistent attendance by all.  There needs to be a transparency and realize it is a team effort by all.  This gave everyone flexibility because on those rare times the IT Mentor could not make Friday he chose Saturday or Sunday afternoons as a substitute or if a team member had a prior commitment."**

- Coaching requires having the time and schedule flexible to organize for and be present at the practices and competition as well as the willingness to do these things.  The reality of this can be challenging (i.e. unexpected surgeries) so redundancy is good to have an assistant coach or qualified parent as necessary.  A single phone call or text lets everyone know if there is a problem, issue or running late.  Remember communication and structure helps to create a strong team and it is the coach's responsibility.  Detail follow through is essential as are the abilities to multitask and delegate

- Patience is a virtue and while it can be developed, the coach must be able to handle teenage immaturity with wisdom and a view toward their future potential.  However disrespectful behavior should not be tolerated be it towards other team members, the coach, the mentor or anyone else.

- Corrections should be done quietly and privately with another adult present.  Keep the parent informed of relevant issues and parents are the coach's best allies

- Having your I.T. mentor at the competitions helps the team, a morale booster for the cadets and is a nice token of thanks for them putting so much time into the team.  Something to plan for from the beginning is the

parents to pitch in for their I.T. mentor's traveling expense and room however it may work out for their company to send them to the Cyber Futures conference. Our I.T. mentor and also one of our C.P. fathers stayed at the Hampton Inn walking distance across from the Gaylord National at lower cost and there was a Cyber Futures conference rate.

- Delegate to a parent or two, especially if they are familiar with hotels and traveling, to research in the beginning to share with the team nearby hotels to the Gaylord National so families can have a better idea of what to budget for. If held around first of April, it is cherry blossom season in D.C. and hotels have cherry blossom packages at lower rates.

- Although my parents and cadets were thrilled we were going to D.C., it is good to take into account the nationals is held at the period of approaching standardized & A.P. testing, final exams and definitely is on the minds of the cadets and parents even if homeschooled as many are dual enrolled and have same dates.

- While at the national competition, instruct your cadets to be discreet, professional and not make bragging or negative comments outside of their rooms whatsoever. A tip, if needed, is instruct the individual cadet as applicable or to all your cadets is to pretend to be mature and discreet at least that helps them think in that direction.

- The more cadet young adults room with their parents, the better as usually they are more accountable for their behavior. When Dee Hamrick and Barbara Dovi gave me their feedback on this topic, both concurred. Here is Barbara Dovi's perspective on this topic: **"I firmly believe that the cadets need to room with their parents at semi-finals and final competitions to avoid any challenges in terms of behavior, peer pressure and distractions prior to the competition. This is not a time to group the cadets in two rooms without adult supervision. The trip to DC created challenges among the cadets on a personal level prior to the competition and with repercussions again on a personal level after the competition. This would allow proper supervision of the cadets and parent participation. Practice as a team can take place anywhere in the hotel with the IT Mentor, Coach and/or parents."**