Background

The Center for Molecular Imaging Innovation and Translation’s scope and key goals assumes that SNMMI will be a leading organization in the field of molecular imaging beyond radiopharmaceuticals, with a major focus on translational research - moving basic science in molecular imaging into clinical practice. Although SNMMI will remain true to its traditional base of nuclear medicine physicians, technologists and scientists, it will expand its reach in the direction of translating emerging molecular imaging modalities and contrast agents into clinical practice and continue to pursue the continued integration of diverse molecular imaging modalities into all SNMMI programs and activities. We also recommend that SNMMI will support the growth of young professionals in molecular imaging by providing free memberships for trainees and discounted memberships for members of new communities (e.g., optical imagers).

STRATEGIC PLAN:

Vision: Molecular imaging and molecularly targeted therapy will be an integral part of the medical standard of care by providing specific information that will be used for diagnosis and to guide therapeutic decisions that improve health and well-being.

Mission: To engage the molecular imaging community and leverage the SNMMI infrastructure to advance the adoption of emerging molecular imaging technologies and probes in preclinical and clinical applications.

Value statement: The Center for Molecular Imaging Innovation and Translation (CMIIT) works towards this vision with the values of excellence, integrity, and inclusivity of diverse disciplines, including fields that are not conventionally associated with nuclear medicine but that contribute to translating molecular imaging innovation.

“Strategy” statement:/Guiding Principles

SNMMI will help establish a pathway for integrating molecular imaging into basic science, drug discovery, clinical trials, and routine practice via collaboration with academic center, industry, philanthropy, and government agencies.

Goals:

FACILITATE TRANSLATION OF EMERGING MI TECHNOLOGIES
• Public policies and regulations should facilitate the approval and adoption of new MI agents/technologies as the standard of care.
• Highlight and explore emerging technologies (such as nanoparticles) that may be novel, experimental, and possibly controversial.

• Increase knowledge among those in the biomedical community about the current value and future promise of molecular imaging, help cross fertilization to other disciplines, and make them aware of the power of molecular imaging and help researchers there get their advances and discoveries to clinic using in vivo imaging.

PROVIDE RESOURCES FOR EDUCATION & TRAINING IN TRANSLATIONAL MI

• Ensure Nuclear Medicine Residency education contains sufficient MI content to make residents aware of and prepared for future molecular imaging clinical applications.

• Develop curriculum guidelines and educational resources for a molecular imaging scientist.

• Develop educational resources for a “translational researcher”.

ENSURE A DIVERSE MEMBERSHIP

• Diversify CMIIT’s membership by attracting researchers, technologists, clinicians, and laboratory professionals involved with molecular imaging and therapy. We want to achieve a “molecular imaging community” identity that includes diversity in work role and modality and provide the appropriate resources for this diverse membership.

FUNDING

• Develop long term, sustainable funding mechanisms for CMIIT projects.
Goal 1: Ensure Nuclear Medicine Residency [and radiology/] education contains sufficient MI content to make residents aware of and prepared for future molecular imaging clinical applications.

- Objective: Continue to work toward a formal molecular imaging-based residency curriculum that includes appropriate molecular imaging concepts.
  - 2012 Action: M. Graham, H. Jacene and H. Jadvar will work on a white paper that formalizes the advance practice curriculum for residents and submit it to JNM. *Should be appearing in JNM in late spring 2012.*

- Objective: Work with ABNM and ABR to have additional MI content included on the exam.
  - ABNM says molecular imaging is “well represented”.

- Objective: Work with nuclear medicine radiology program directors and chairs to include MI into existing programs and ensure that they are aware of resources by the beginning of each academic year (July 1)
  - Board members will schedule time on the AUR and NM Program Directors agendas to discuss needed changes to the residency curriculum and the launch of the new MI Webinar Course.

- Objective: Offer educational resources for residents to be trained in molecular imaging concepts that would augment standard nuclear medicine and radiology residency curriculum.
  - 2011/2012 Action: Rollout and market the new MI Webinar Course. Complete. *Registration information to date is included.*

- Objective: Work to achieve reference to SNMMI guidelines for training in molecular imaging as a part of governmental training grants (e.g., T-32 awards).

- Objective: Provide novel opportunities and/or incentives (e.g., additional fellowship positions/grant monies) for NM and radiology residency programs to include molecular imaging advance practice topics in their curriculum.

- Objective: Publish advance practice topics for residency training by December 2012.

- Objective: Develop a proposal for a Molecular Imaging Fellowship and seek potential funding sources for the fellowship. (MSKCC and Stanford)

- Objective: Outreach and marketing to other residency programs directors---neurology, psychiatry, oncology, cardiology, radiation oncology---to provide education on molecular imaging.
  - Responsibility: new SNMMI Outreach Task Force, SNMMI Marketing Department
Goal 2: Develop curriculum guidelines and resources for a molecular imaging scientist.

- **Objective:** Determine next steps for the white paper.
  - **Responsibility:** MI Education TF
  - **2012 Tasks:**
    - Evaluate feedback from the community.
    - Board members will help create awareness of the MI Scientists Curriculum in the following ways:
      - Board members will initiate this outreach directly with appropriate meetings, organizations, and organizational representatives and will copy staff to begin this outreach.
        *Some minimal work has been done in this area. Kurt Zinn will present an abstract on the white paper at WMIS.*
      - Formal presentations to/satellite sessions with major relevant groups, such as WMIS, IEEE, FASME, Nano particle meeting in LA, Chronicle of Higher Education, BMES, Society for Neurosciences, Association of Pharmaceutical Scientists, AALAS, NIH.
      - Present at Cancer Imaging Camp (Sam Achilefu will contact Richard La Forest, Joe Ackerman, and Anne Menkins)

- **Members (Jason, Henry/Julie; also contact Ralph W and Sam G.)** will compare their DOE, R25-T training grant curricula to the Scientist curriculum.

- **Objective:** Complete a full compendium of educational and training resources that can guide and/or augment post-graduate education.
  - **Responsibility:** MI Education TF
  - **Metrics:**
    - Web-based compendium of resources. *Will need to be updated in 2012-13.*

- **Objective:** Continue working with ABSNMMI on the revision of their curriculum.
  - **Responsibility:** MI Education TF-designated representatives
  - **Metrics:**
    - New ABSNMMI curriculum that incorporates MI scientist curriculum guidelines.
      *Discussions are underway with ABSNMMI, but need to be followed up on.*
Goal 3: Develop educational resources for a “translational researcher”. CMIIT will provide researchers with needed education and training on the “nuts and bolts” of translating and transitioning an agent or technique from pre-clinical research into the clinical practice (tracer development, equipment, funding). This is an expansion of the molecular imaging scientist educational curriculum guidelines.

Background: The Board members discussed the need to develop educational resources for a translational researcher which is an expansion of the “molecular imaging scientist” curriculum development process. Achieving this goal is critical; otherwise the pipeline of research will be cut off.

- Objective: Develop “translational researcher” curriculum guidelines/best practices toolkit for MDs, PhDs, laboratory professionals, technologists, and others working the field. This is an expansion of one of the domains within the CMIIT curriculum guidelines for a molecular imaging scientist.
  o Responsibility: MI Education TF, in conjunction with CTN
  o Metric: Toolkit of translational researcher best practices/guidelines.
  o 2012 Tasks:
    - Develop translational researcher curriculum guidelines that outline unique competencies (skills and knowledge areas) that trainees are expected to develop.
    - Identify key institutions that are successful at translational research, solicit the input of representatives from those institutions, and determine how things are “really working” to inform our work in this area
    - Develop a “toolkit” of resources for the translational researcher. Inventory currently available resources for each competency and identify missing areas.
    - Develop resources and educational offerings (webinars, lectures, categorical seminar workshops) to fill these gaps. (2012 Categorical)
    - Identify the appropriate audiences for the “toolkit” and develop a marketing plan to these audiences (company researchers, lab professionals, chemists, nuc med physicians)

  Work is well underway in this area. Translational curriculum white paper is almost complete and ready for a wider distribution and input prior to publication.

- Objective: Provide training resources in preclinical imaging.
  o Responsibility: Preclinical Task Force
  o Metrics:
    - Online and live courses offered.
    - Guidelines published.
  o 2012 Tasks:
    - Sponsor a university-based hands-on training course in preclinical multimodality molecular imaging. This type of workshop is
particularly useful particularly for junior scientists or scientists new to the field to learn the current preclinical technologies in MI research. Develop and issue a RFP to institutions involved in preclinical imaging to partner on workshops on both coasts. *Johns Hopkins workshop held in March 2012.*

- Ensure didactic content from workshops is available in a distributed format. *Lectures from 2011 Davis workshop are posted as a free resource to bring in new members.*

- Publish a white paper on SNMMI guidelines for preclinical standards (PACs, etc). *In progress.*
- Publish a white paper on SNMMI guidelines on creating a preclinical imaging training program.

*The Preclinical Imaging Task Force is drafting a white paper for publication in JNM addressing some of these topics. The Task Force is also convening a workshop with WMIS, ESMI, members of the Australian MI community and pharma in June 2012 to discuss these topics, identify needs and develop a global training and certification program.*

- Explore the concept of developing a preclinical trials network.
- Explore the concept of developing preclinical phantoms.
Goal 4: Create a “Network” for translational research. Identify and/or create opportunities for basic researchers, translational researchers and clinicians to interact to increase awareness, understanding, support, and funding for translational research.

Background: One of the barriers to the commercialization of new probes is the risk involved in taking these new agents to phase 0. Academia can assist this process by integrating new diagnostic and therapeutics into early academic, investigator-initiated clinical trials, which “de-risks” the process for companies. Although NIH is currently providing funding for translational research—through CTSA core grants—few, if any, contain an imaging component.

- Objective: Create a consortia around specific topics—such as INDs, pharm tox (include small businesses, industry academia, others). Must include other groups (eg NEMA) that are (U01 grants-QIN, NTIR could be a model). Possible topics include

  - to bring a novel imaging agent through clinical trials – this would be especially useful if it were a multimodal agent that is actually targeted to a specific disease state. With an example like this, many more may be able to follow.
  
  - to assist with pharm/tox package funding
  
  - to bring an entire class of compounds/targets to the FDA
  
  - to develop animal PACs
  
  - to support/advocate for trials/pharmtox/ approvals with FDA for classes of compounds

Investigation of FLT consortia (which is underway) will lead to better understanding of how to create other consortia.

- Objective: Create a forum for the discussion and creation of partnerships.

- Objective: Convene a workshop or summit to identify key roadblocks (barriers and opportunities) for translation and develop an action plan to address the issues. Build off of previous workshops and recommendations. Discuss the consortia concept. Could focus on a particular topic with focused invitees (topics: isotope production, etc) 2012 Industry Partners Council is a smaller version of a Summit but can produce similar results.

- Objective: Convene interactive meetings, such as a translational research stand-alone workshop or session at the MWM and AM. Also partner with other organizations such as
AACR and ASCO when doing a larger topic. Seek multi-year support.

*AACR-SNMMI Cancer Biology and Imaging Symposium planned for February 2013.*

- Responsibility: New CMIIT Translational Research Task Force; MI Program Committee and associated Symposium Planning Committees

- Metric: Workshops and meetings held.

  ➢ For FY2012, convene three such meetings:

  - MWM-Summit on Amyloid Imaging, which would be very training-oriented (eg. Reading). *Done at MWM 2012.*

  - Pursue partnership with Human Amyloid Imaging meeting to highlight scientific research. *Discussed with HAI organizers.*

  - Pursue a partnership with ASCO to continue the focus on multimodality molecular imaging of breast cancer.

  - NIH symposium on Translational Multi-modality cardiovascular molecular imaging. *Done April 2012.*

  - New CE sessions and Categorical at the AM-Resources for Translational Molecular Imaging, based on translational scientist curriculum and including a speakers from FDA. *This is done for 2012*

  - Future sessions or workshops could be convened on issues related to key road blocks for translation, such as:

    - funding
    - FDA, CMS
    - how to get access to tracers
    - industry-academic partnerships –highlighting differences in educational objectives relating to working with industry, including different milestones, publication issues, conflicts of interest.
    - pharm/tox-- how to contract so it’s not cost prohibitive ( pool recourses)
    - “Academic grants and contracts” and we could have 3 speakers: IRB person, John Kotyk, and a tenure/promotions person.

  - Consider facilitating tech transfer by holding a convention or tech transfer fair – invite investigators to present their agents that are available to license. We could invite VCs or
sponsor an event at a pharma event that is well attended by VC companies.

The 2012 Annual Meeting Categorical and several CE sessions address these topics (see attached list of programming for AM 2012). Other topics on this list should be proposed for the MWM 2013 and the AM in 2014.

- Meet with NCI and continue outreach to NTR group. Request the development of a NIH/NCI workshop grant for a training workshop for existing academic radiologists/nuclear medicine physicians in translational research/molecular imaging (including funding/grants for translational research), highlighting the importance of imaging within translational research.
- CMIIT should consider the NTR model as a template/analogy for other purposes since they are working on guidance for translating optical agents. CMIIT has already been in discussions with NTR via some of our board and task force members, such as Eva Sevick, Chris Contag, and others.
  *CMIIT has communicated with and will continue to communicate to NTR that we are interested in partnering and contributing.*
- Pursue a possible collaboration with AAAS and RSNA.

- Objective: Develop a roadmap and/or mechanism for translation of different classes of MI agents (e.g. Generic vs. Specific imaging agents, including optical agents—all of which are much different than drugs or even contrast agents)
  - Responsibility: New CMIIT Translational Research Task Force
  - Metric: White Papers
  - 2012 Tasks:
    - Develop a series of white papers in JNM or Molecular Imaging on translation—focus on nuclear, optical, nano (what works by analogy and what does not). This could be a dedicated issue but it would be best if a special series of articles occurring in each regular issue.
    - Create an online forum so that people can see how to move from basic to translational.
    - Designate a specific area on the website to effectively market the resources/opportunities we have.
    - E. Sevick and S. Achilefu, others could provide us with an SOP for optical agents to use as a model for translation that we might apply to other modalities, such as high field MR and ultrasound. This could include a sample.
    - The FTTF survey should be expanded to include optical agents and ask whether there is IP associated with any of the agents. *Tracers survey data still being validated, but a process will be in place for sites to access the CTN database and update their information. This will need to be round #2.*
• Objective: Work with other groups – other societies (e.g., AACR) governmental agencies (e.g., NIH) and philanthropic funding entities (e.g., foundations) to advocate for the issuing of grants for translational research (RFAs, grants, CTSAs, T32s and R25Ts) that include imaging as a component.
  o Responsibility: New CMIIT Translation Task Force
  o Metric: New funding enabled for translational research.
  o 2012 Tasks:
    ➢ Initiate discussions with the Cancer Imaging Program and other professional societies to discuss whether future and sufficient NIH investments in the area of translational molecular imaging can be used to accelerate the entry of new diagnostic and therapeutics into early academic, investigator-initiated clinical trials. There is an opportunity to continue/advance the NIH mission but no mechanism exists currently (even through NEXT or CTSAs). Several options for funding (e.g., supplemental grant, or “administrative statement” could say that the CTSA will fund imaging).
      • Develop a committee to work with NIH/NCI to develop a mechanism to fund the imaging piece of what is conducted within a CTSA core grant.
      • Develop a letter to NIH to initiate these discussions.
      • Hold a meeting with NIH/NCI include Larry Clarke.
    ➢ Board members and staff will track the creation of the NIH Institute on Translational Medicine and weigh in on the advisory panel, chair, and any other position that might be open for public comment and input. 
      *Recommended nominees forwarded to SNMMI board; SNMMI board selection (Joanna Fowler) sent in formal letter to NCATS in April 2012.*

• Objective: Pursue collaboration with the AAAS Translational Journal (to offer imaging expertise) or other translational journals (e.g., Neoplasia, Cancer Research, Molecular Cancer Research, Cancer Cell).
  o Responsibility: New CMIIT Translation Task Force
  o Metric: A formal collaboration, or dedicated issue, or the addition of one imaging person on the AAAS Translational Journal editorial board.
  o 2012 Tasks:
    ➢ Meet again with the editor of the AAAS translational journal again to discuss collaborations.
    ➢ Work to get a special issue of the translational medicine journal focused on imaging.
    ➢ Determine whether imaging expertise could be permanently offered on this new journal.
Goal 5. Public policies and regulations should facilitate the approval and adoption of new MI technologies.

Background: There are several issues related to the approval/adopter of new MI technologies. Current FDA rules represent some barriers to approvals especially as we move from nuclear probes to others where agent mass will be an issue. Mutual guidance for FDA and the MI community on approval of molecular imaging compounds and devices for translational investigation is needed. Perhaps with additional guidance, agents and devices will be more efficiently approved.

FDA divisions responsible for treatment accept the use of imaging biomarkers as surrogates. SNMMI can be the bridge between pharma and the manufacturers. Approval of radiopharmaceuticals for diagnosis is still challenging. Few studies are designed well enough to show effectiveness (difficult without corporate sponsorship). Participants agreed that CMS / device companies / pharma are looking to imaging to provide early evidence that a therapy is working (CMS has case studies on website). Also, FDA has approved early trial imaging biomarkers (e.g., Alzheimer’s markers from Avid, GE and BSP); they are not yet FDA approved. Use of molecular imaging biomarkers as surrogate endpoints in clinical trials is crucial. The group discussed CMIIT being able to work with FDA and pharma and serve as link between them since we are not affiliated with a single company. While the SNMMI Clinical Trials Network is working towards these ends in many respects, the BOD members felt that there was a role for the CMIIT in achieving the goal.

- Objective: Define a model CER study that could be done for a diagnostic imaging agent vs. a therapeutic. (Compare patient management with and without molecular imaging. Amyloid imaging would be a good example.)-This will be moved to SNMMI; it is not a CMIIT activity.

- Objective: Develop a white paper that presents a model for the faster approval of molecular imaging agents that utilizes the FDA handling of model imaging agents as a paradigm. Talk about effectiveness – as effectiveness in imaging the target. Responsibility: Future Tracers Task Force. Sub-themes of the paper, or additional papers could cover these topics:
  - base approval on physiology not diagnosis and which explains that efficacy is not appropriate for imaging agents
  - explains how you show physiologic changes—essentially illustrate how an applicant would demonstrate to FDA that biochemical changes/metabolic processes are taking place. (e.g., blocking experiments)
  - case studies
  A draft has been completed and will be advanced via a diverse SNMMI FDA Task Force.

- Objective: Explore the development of a consortia that could pursue approval of orphan drugs, possibly using the infrastructure of CTN. [Responsibility: CMIIT/CTN]

FLT Consortia development concept underway.
Objective: Discuss/advocate with FDA on the Array of possible production schemes (e.g. microfluidics). Technical issues are not that great but regulatory issues are. [Responsibility: HPRA/SNMMI Government Relations Committee]

Objective: Hold Workshops with FDA on particular topics, such as qualification of biomarkers or approval pathway for optical agents.

Objective: Work with FDA to identify a common set of regulatory requirements for a particular class of agents (e.g., optical, PET, multimodal).

Objective: Work with FDA to discuss “first in man” for groups of compounds. We could identify 10 compounds and request to do pharm tox for an identified class of compounds or combination application. Can we identify the class of compounds/target? Can we work with NCI to fund/conduct the pharmtox? FDA has accepted approvals for classes of compounds.

Objective: Push for more clarity regarding clinical trial regulations for novel imaging agents. Coordination with the FDA to provide greater outreach, training and consulting to imaging agent and imaging systems companies and to imaging agent researchers to demonstrate how the initial novel agents are being brought into clinical trials.

Objective: Discuss/advocate with CMS to buy into this concept of providing more accurate information to the physician. Consider using NOPR as a model? Continue to invite CMS to our meetings. [Responsibility: HPRA/SNMMI Government Relations Committee]

Objective: Collaborate with industry. Invite industry experts to participate with the CMIIT BOD in advisory capacity in a regular format. Continue the Industry Partners Circle meetings annually, but focus the meetings on specific topics and expand the companies invited.

Objective: Consider development of a biomarker consortia that brings together Pharma, imagers, different societies, FDA, other agencies to pursue more appropriate regulatory paradigm for imaging biomarkers. Ensure coordination with other societies working in this space so there is no duplication of effort.

- Group could work on providing convincing evidence to FDA for specific molecular imaging biomarkers for disease states and define acceptable levels of standards of evidence for the FDA.

**CTN Biomarker Developer Working Group was comprised of pharma and imaging companies but no real interest/momentum on this from the groups involved.**

Objective: Pursue developing guidance and discussion with FDA on nanoparticles.
• Objective: Develop collaborative “guidance” workshops with FDA on key areas, in particular toxicology screening and manufacturing. This is an opportunity to work collaboratively with FDA as they are open to discussions with the community that offer expertise, education, opportunities to bring community consensus on key areas that may affect the expedited approval of new agents.

  o Responsibility: FDA Task Force
  o Metric: 2010/11 manufacturing workshop; 2012 toxicology screening workshop
  o 2012 Tasks:
    ➢ Identify key areas where it would be beneficial to offer additional guidance to FDA (i.e. INDs, safety and toxicology, tox screening, manufacturing, physiologic changes) and propose joint workshops.
    ➢ If we have a workshop/meeting with them and try to create consensus and write up the proceedings and this may serve as “guidance” in the future

  SNMMI worked with FDA to hold stakeholder workshop on 212 regulations. Many other collaborative activities underway with FDA.

• Objective: Develop manufacturing guidelines that provide a consistent platform between both commercial and academic manufacturers (“how to” materials)

  o Responsibility: FDA Task Force
  o Metric: Guidelines are accepted by most biomarker manufacturers and Pharma.

• Objective: Promote molecular imaging biomarkers in clinical trials.

  o Responsibility: Primarily CTN; with support from CMIIT
  o Metric: More trials are underway using molecular imaging biomarkers.
  o 2012 Tasks:
    ➢ Research and identify molecular treatments/therapies in the pipeline and target these as areas to pursue partnerships
    ➢ Hold workshops on molecular imaging biomarkers biomarkers and new imaging agents
    ➢ Increase efforts to validate imaging biomarkers and surrogates through pathology, outcomes measures
    ➢ Encourage R&D for next generation of imaging biomarkers

  In progress.

• Objective: Maintain database of future and current tracers.

  • Responsibility: Joint CTN/ CMIIT effort (in collaboration with RPSC)
  o 2012 Tasks:
    ➢ Validate tracer information from 2009 tracer survey and expand to include optical agents, possibly contrast or other agents.
    ➢ Determine how best to collaborate with MICAD.
The CTN database, which includes FTTF survey data, can serve this function – but right now it is not generally available information. Someone could call SNMMI Staff and get this information if the site gives permission.

Also, we have raised this issue with MICAD and they will be discussing it internally. We will need to follow up.
Goal 6: Increase knowledge among members of the scientific community involved in biomedical research about the current value and future promise of molecular imaging, help cross fertilization to other disciplines, and make them aware of the power of molecular imaging and help researchers there get their advances and discoveries to clinic using in vivo imaging.

Background: There was considerable discussion about whether an outreach goal was a shared responsibility between SNMMI and CMIIT, or whether it was more a SNMMI goal. There was concern that CMIIT will soon have very limited resources. There was overall consensus that SNMMI is focusing on/should be focusing on this exact issue and that it should be removed from the CMIIT list of goals. Subsequently, a working group of board members refined this “outreach” goal to be more educational in nature and to focus its resources on the scientific community—not the clinical community.

Overall Metric: Increased number of researchers doing imaging-writing papers/getting grants and increased awareness of imaging as an important research tool.

- Objective: Outreach to basic science, disease-related research societies (e.g., AHA vs. ACC), pharma, and pre-clinical MI communities with a goal of increasing awareness, communication and collaboration.
  - Responsibility: Preclinical Imaging Task Force, Program Committee (with a link to the SNMMI Outreach TF)
  - Metric: More molecular imaging research conducted and more papers; increased number of collaborative programs with other targeted organizations.
  - 2012 Tasks:
    - Prepare a brochure describing the benefits of molecular imaging in basic research and in small animal imaging for the web-site.
    - Examine and emulate the marketing approaches and models used by key ICMIC/SAIRP leaders such as UC Davis and Wash U.
    - Include information about our Speakers Bureau
    - Members will identify appropriate people/areas to outreach to.
    - Invite members of these communities to our multi-modality workshops.
    - Pursue reciprocal relationships for board members, meeting organizing committees and developing joint programs.
    - Increase our presence at other molecular imaging organization meetings.
    - Showcase and leverage members who are already going to these meetings. *Partnerships and joint-sessions planned with AACR, AHA and the American Physiological Society.*

- Objective: Reach out to veterinarians.
  - Responsibility: Preclinical Imaging Task Force
  - Tasks:
- Initiate discussions with groups such as AALAS and to determine what their needs are and to identify the subpopulation that would benefit from imaging training.
- Initiate discussions with research institutions with vet schools, e.g. University of Missouri, Columbia and UC Davis or others and determine collaborative opportunities.

*Planned continuation of work with AALAS, such as reciprocal participation in meetings. AALAS representative will attend future Preclinical Imaging Training Certification Program development workshop.*

- **Objective:** Ensure meetings feature all modalities—multimodality and multi-specialty molecular imaging – for example the CVMI and molecular neuroimaging meetings featured sessions/speakers from all modalities.
  - **Responsibility:** MI Program Committee and SNMMI Scientific Program Committee
  - **Metric:** Dedicated multimodality workshops and sessions at AM, MWM.
  - **Tasks:**
    - Hold annual workshop(s) that highlight multi-modality molecular imaging.
    - Engage in the planning-review of the Mid-Winter and Annual Meeting programming to ensure relevant sessions contain appropriate representation from multiple modalities.

*Complete for 2012.*
Goal 7: Highlight and explore emerging technologies (such as nanoparticles, photoacoustic) (both carriers and equipment) that may be novel, experimental, and possibly controversial.

Reflect conversations with FDA and other societies in the objectives. Work with relevant societies and IOM/NAS to develop conjoint efforts/documents.

- **Objective:** Reach out to the optical imaging community for purposes of raising awareness, translation, and membership. Our message to this community is that there is a pathway for translation. We should work with them to help address perceived/real barriers to the translation of optical imaging agents.
  - **Responsibility:** a new SNMMI integrated Task Force on Optical?
  - **Metrics:**
    - Formal relationship or jointly sponsored session with optical societies
    - More non-nuclear imagers as attendees and members.
  - **2012 Tasks:**
    - Increase outreach efforts with the Optical Society and SPIE
    - Reach out to optical device makers as well as optical probe developers and facilitate their collaboration via our workshops and our industry advisory group.
      
      *Complete for 2012-needs to be expanded, followed-up on in 2013.*

- **Objective:** Provide resources to survey, assess, and provide educational information on new and emerging technologies and agents (e.g., new optical probes, photoacoustic technologies, electron-paramagnetic resonance (EPR) ultrasound bubbles, nano, quantum dots, molecular beacons, Cerekov imaging) through white papers, workshops, etc., to determine how they can/cannot be useful in molecular imaging.
  - **Responsibility:** Program Committee and/or new task force?
  - **Metric:**
  - **2012 Tasks:**
    - Nano workgroup will consider development a white paper on nanoparticles and molecular imaging.
    - Create white papers and primers on new/emerging technologies or existing technologies used in novel applications.
      
      *Primers on future tracers under development. No work currently planned for non-nuclear molecular imaging agents.*
    - Pursue whether development or distribution of content could be coordinated with others, in particular, MICAD.

- **Objective:** Advocate for the acceleration of additional cutting edge science into the SNMMI AM and MWM programming.
  - **Responsibility:** MI Program Committee and SNMMI Scientific Program Committee
• Objective: Sponsor disease-, technology-, or MI topic-focused workshops (e.g., cardiology, brain or nanotechnology) as either stand alone programs or within AM and MWM.
  o Responsibility: MI Program Committee and SNMMI Scientific Program Committee
  o Metric: Number of sessions or workshops and attendance at and evaluation of these sessions/workshops.
  o 2012 Tasks:
    ➢ Sponsor workshops (already described above)
    ➢ 2013 MWM workshop on PET/MR under development; 2013 joint workshop with AACR on imaging and cancer biology.

• Objective: Expand SNMMI journal offerings to include a home to expand the scope of imaging sciences covered, facilitate the dissemination of scientific research related to the emerging/latest innovations in MI, and enhance the flexibility of submission.
  o Responsibility: SNMMI Publications Committee; MI Journal Editorial Advisory Board
  o Metrics:
    ➢ Continued improvement in Molecular Imaging’s impact factor.
    ➢ Sustained, financially beneficial, symbiotic, long-term relationship with Molecular Imaging.
    ➢ A SNMMI “suite of journals”.
  o 2012 Tasks:
    ➢ Pursue a formal relationship between JNM and MI or another journal that would achieve the same objectives.
    ➢ Form a family of journals that cover the wide range of sciences relevant to NM and MI and create a flexible process submission process and cross referral across the family of journals.

• Objective: Ensure resources on these cutting edge technologies are available on the SNMMI and/or MI website
  o Responsibility: MI WebSite Task Force
  o Metric: Numbers of fact sheets and case studies on the WebSite.
  o 2012 Tasks:
    ➢ Develop fact sheets or primers on specific tracers and/or technologies, and/or practical applications (e.g., photoacoustic optical imaging of melanoma).
    ➢ Primers on future tracers under development. No work currently planned for non-nuclear molecular imaging agents.
Goal 8: Diversify CMIIT’s membership. CMIIT will represent a molecular imaging community that includes diversity in work role and imaging modality and provide the appropriate resources for this diverse membership.

Background: We have been successful in recruiting people to help that have barely heard of SNMMI. People not traditionally associated with SNMMI want to become involved in CMIIT. We need to translate that success to a larger scale. Many action items identified by the Membership and Innovation Task Force have been implemented this year (e.g., overhauling the SNMMI membership category descriptions and adding a new category, early marketing of non-nuclear speakers at the Annual Meeting). Marketing campaigns should leverage and build on this work.

The board discussed whether we want a working membership, or a much larger group that just pays dues so they can say they are a member? What are expectations of a CMIIT member? Is it a working membership, or should we strive to have a large volume of members.

Membership is driven by tangible benefits—things you cannot get anywhere else. We need to also define how we differ from other societies (e.g., Optical Society) and the key is translation. Multimodality, multispecialty, translational workshops are key, as are workshops on new imaging agents, biomarkers, and clinical trials on new imaging agents.

- Objective: Define distinct, tangible benefits of membership (which are distinct from SNMMI membership benefits) that attracts diverse audiences:
  - Responsibility: MI Membership and Innovation Task Force
  - Metric: List of benefits that are ranked as highly valued by our membership.
  - Tasks:
    - Survey attitudes/motivations of those who have attended our MI Summits and Translational multimodality workshops to help refine our messages.
    - Explore how the journal could be considered a part of the benefits a CMIIT member receives (with no additional charge)
    - Ensure tangible benefits exist for each constituency we want to attract, especially technologists
      - Lock down and/or migrate portions of the MI WebSite to the CMIIT site for “members only”

- Objective: Grow the CMIIT membership, especially targeting lab professionals, optical imagers, pharma scientists, technologists, and young professionals.
  - Responsibility: MI Membership and Innovation Task Force (some items are for Scientific Program Committee)
Metric: CMIIT will retain a majority of its members in 2010/11, when we begin charging dues. Over the next three years, CMIIT will exceed its June 2010 membership of 2,200.

Despite undertaking many of the tasks outlined below, CMIIT membership has significantly declined (similar to the PET COE and SNMMI councils).

2012 Tasks:
- Continue to offer awards specifically for lab professionals.
- Offer again the incentive program for current BOD members to involve their lab professionals.
- Provide honorary memberships or special promotion to non-nuclear molecular imaging leaders.
- Promote summer undergraduate fellowships in MI.
- Continue to target biomedical research programs with special promotions (e.g., biomedical engineering program directors to target their students or ICMIC/SAIRP PIs to target their lab techs).
- Target groups that received S-10 grants over last 5-10 years.
- Target instrumentation companies – provide brochures that can accompany their equipment.
- Work with SRS and other “like-minded organizations” and promote membership to them—use SRS this as a case study.
- Develop Special programs for conversion of free trial membership.
- Develop member-get-a-member campaigns specific to our BOD and Task Force members.
- Secure “keynote” speakers at Annual Meeting via honoraria very early and consider this speaker for CE during the Business Meeting [honoraria will need to be approved by the SPC].
- Ask the SPC to consider offering annual meeting discounts to poster presenters.
- Ask the SPC to consider marketing annual meeting speakers very early on in the process, especially for those who are new to SNMMI.
- Ask the SPC to consider additional marketing of annual meeting keynote speakers, especially for those who are new to SNMMI.

Objective: REQUIRE all SNMMI demographic forms to contain appropriate information for tracking, including measurements of how marketing campaigns are working (e.g., how did you hear about SNMMI?).
**Goal 9: Develop funding mechanisms for CMIIT projects.**

**Background:** The Board members agreed that it was a priority to develop novel, unique ways to raise funding for the Center (traditional financial resources are “dried up”). The CMIIT has some funding left for next fiscal year-2010/2012, but it will be significantly less than what we have had in previous years (we have averaged slightly more than $1M each year for MI staff, CMIIT projects, and SNMMI projects). Several board members suggested partnering with ERF to fundraise. While there was discussion around the need for organizational commitment to fundraising, it was pointed out that the CMIIT should focus on developing the programs and leave the concern about fundraising/strategy to SNMMI. So while part of the goal (for overall fundraising) should be SNMMI’s, there were several suggestions about what CMIIT specifically could/should do to ensure long-term sustainability of our efforts:

- **Objective:** Develop a “generation 2” campaign that would create a dedicated and protected endowment for the MI Center to accompany the new strategic plan.
- **Objective:** Work with ERF to better learn how to put together a compelling message or case statement that the donors need.
- **Objective:** Consider a more formal relationship with ERF to continue the campaign initiatives.
- **Objective:** Work with the SNMMI development office and SNMMI/CMIIT faculty for meeting grants from foundations and disease-specific organizations and companies not traditionally associated with imaging (e.g., Avon or Revlon to support our Breast Symposium).
- **Objective:** Work with SNMMI/CMIIT faculty for meeting grants/opportunities for synergy among projects.
- **Objective:** Develop a database of foundations that could fund molecular imaging research based on their disease focus and a possible interest in imaging-related research.
- **Objective:** Pursue creative funding mechanisms, such as ads in Newsletters, webinars, email blasts, and website ads that might generate additional revenue for the Center.