

Mentoring in Clinical Research

A Guidebook for Mentors in Japan

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Center for Clinical Epidemiology



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Forward

Clinical research training relies on transference of critical knowledge, skills and attitudes from experienced to emerging generations. Traditionally, in Japan and elsewhere, this transference of knowledge and skills was expected to take place through an apprenticeship like arrangement between the senior teacher and his or her protégé. Clinical research mentorship was not taught or even explicitly articulated; there was an assumption that mentoring came naturally, and the process of mentoring was not formally discussed.

Over the past few years, however, there has been increasing interest in the theory and practice of mentorship in academic medicine. Research has shown that formal mentorship is integral to a productive and successful career in the academic health sciences, particularly for clinical researchers. Formal, structured, mentorship supports the success of junior researchers in publishing first authored papers and in obtaining funding, while also improving their sense of professional satisfaction. Yet, many clinical researchers report that they do not currently have a mentor, and this number is significantly lower for women. Recent research conducted in Japan has shown that while many researchers report having a mentor, the understanding of the role of the mentor is still evolving and more training of both mentors and mentees is needed. As the clinical and translational science workforce in Japan continues to expand, we need to rethink the manner in which mentors are trained and evaluated.

The good news is that mentor training works. As a result, many large academic medical centers in the U.S. have implemented new mentor development programs and opportunities for mentor training continue to expand in Japan. Resources such as this Mentoring Guidebook are critically important to help support mentor development in Japan. Faculty members, clinical researchers and others who participate in mentor training and have the opportunity to reflect on their own mentoring practices while engaging in conversation with respected peers become more skilled mentors and derive more satisfaction from mentoring. This often translates into more productive mentees which is good for science and ultimately for society.

The materials found in this Mentoring Guidebook build on a set of core competencies and learning objectives for mentors that will help them to be more successful in their daily interactions with their mentees. It is aimed at clinical research mentors at all levels of training and working with mentees at different levels of professional development. The format is designed to promote peer learning guided by discussion of mentoring challenges intended to promote reflection of one's mentoring philosophy and practices.

The concepts that underpin research mentor training materials such as this Guidebook for Mentors in Japan are in fact the basic building blocks for all human relationships—clear communication, assessing understanding, establishing mutual expectations, and making it adaptable to many different situations and audiences. Mentoring matters, and for those who are serious about elevating the level of mentorship and supporting a culture of mentoring in Japan, the “Mentoring in Clinical Research: A Guidebook for Mentors in Japan” will prove to be an indispensable resource.

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Section 1. What is mentoring and why is it important?

- What is mentoring?

A small plant grows. It needs air, sunshine, clean water, and the correct environment for it to grow optimally into a tree that has strong roots, bears abundant fruit, and eventually produces its own seeds of the next generation. A small plant may grow in the absence of one or more of these factors, but it will be stunted—perhaps it will be easily toppled in some future storm, perhaps it will yield little crop, or perhaps it will cease to bear seed early and wither. Manipulation of water content or direction of sunlight can also alter a plant's natural course of growth into a variety a new shapes and forms.

Similar to the sapling, young trainees across a variety of professional disciplines require a complex interaction of external forces to optimize their own professional productivity, career trajectory, and ability to influence future generations. An abundance of research suggests that an effective environment for clinical research trainees includes adequate and accessible mentorship.

- Roles of a mentor

The word “mentor” encompasses many varying roles that satisfy a variety of functions in the raising of trainees. In general, however, the idea of mentorship consistently includes the following key components.

- *Guidance*: The mentor serves as a guide for the mentee as they progress through their training. Rather than through orders or directives (as would be given by a boss), the mentor can guide their mentee in a positive way through a longitudinal series of discussions and “back and forth” interactions that often allows the mentee to consider various pathways, and subsequently choose the best *direction* to achieve their goals.

- *Advice*: In order to guide the mentee in the best way, the mentor serves as a constant and reliable source of advice, drawing on both personal and professional experience, including expert and/or specialty knowledge, and familiarity with the research and/or academic environment. In the ideal mentoring relationship, the mentor does not hesitate to share this advice with mentees, and the mentee does not hesitate to seek this out from his/her mentor.

- *Skill-building*: The mentor is invested in ensuring that his/her mentee gains the necessary skills required to achieve their goals. If the mentor is also a clinical colleague/supervisor, this may include clinical knowledge or patient-care skills. If one is acting in the capacity of a research mentor, this may include passing on skills in clinical questioning, research design, or data analysis. When the mentor does not himself possess the necessary knowledge, he will share his resources with the mentee in order to get them the best available skills. Teachable skills may also include interprofessional skills including networking, relationship-building, professionalism, and supportive counselling.

- *Facilitation of mentee's professional goals*: In essence, all of the above roles of mentors serve to prepare and facilitate the mentee to independently achieving his/her professional goals. In addition to the goals of mentee, a mentor may also consider the “bigger picture”-- the goals of

the department, institution, and society—but these are considered secondary to the needs of the mentee and distinguish the mentor from the supervisor. The primary purpose of a supervisor is to facilitate the goals of the institution/department, even if those goals are counter to the growth and development goals of the mentee. If these goals are aligned, the supervisor may also be acting as a mentor. However, if the goals of the mentee and the department are poorly aligned, the mentor must choose to play either a supervisory role or a mentoring role, as both may be difficult. Similarly, serving one's own goals may lead to conflicts of interest and should probably be consciously placed as a lower priority in the mentoring context. Mentoring should *not* be approached as free labor by subordinates to achieve the mentors own goals!

- Why is mentoring important?

A large and continually growing body of research has shown that mentoring is an effective modality to facilitate the development of trainees in a variety of ways and contexts. In a seminal 2006 *JAMA* article, Sambunjak summarizes this well: "Mentorship has an important influence on personal development, career guidance, career choice, and research productivity, including publication and grant success." This conclusion has been echoed in several subsequent papers.

-Personal growth of mentors and mentees: Mentorship serves a critical role in human development, and specifically in academic relationships. Mentoring relationships are, in fact, so important that they have been described as "vital" to satisfaction and professional success of not only mentees, but mentors as well. (Straus 2013) Optimal satisfaction among both staff and trainees can have lasting benefits in other areas as well including human resource recruitment and retention, goals with which many institutions struggle, as well as institutional reputation and future funding.

-Research productivity: Numerous qualitative and quantitative studies of mentoring have shown that optimal mentoring relationships increase research productivity. Especially in the busy clinical environment of academic hospitals, mentors can serve as a point of focus for young trainees to concentrate on their research goals, which are often prohibitively difficult without faculty support. In addition to moral support, mentors provide concrete clinical and research skills that allow trainees to (1) best consider clinical questions, (2) design fulfilling projects around research questions, (3) obtain and analyse institutional data, (4) and present and publish their findings to colleagues and peers.

- Career mobility: In addition to the important concrete skills outlined above, mentors also play an important role in teaching the characteristics and qualities ("soft skills") needed for a successful career trajectory. (Kashiwagi 2013) From fostering inter-professional relationships to teaching grantsmanship for obtaining grant funding, these soft skills are vast and are likely equally important as the concrete skills as trainees develop into their career roles. Role-modeling likely plays an important role in conveying of these skills, as does introduction of the mentee to a mentor's established professional networks.

- What is “Team-Based Mentoring”?

Mentoring works best when mentors have adequate time and skills to properly guide their mentees for future success. In the busy clinical environment, it is not realistic to assume that a single person can adequately fulfill all the various needs of their mentees, despite their best intentions. In the same way that it “takes a village” to raise a child—i.e., a loosely-knit team of parents, siblings, teachers, community leaders, and peers all contributing to the growth and development of an individual—there are many manifestations of mentorship (Figure 1).

Often times, a *lead mentor* plays the role of choreographer to the numerous other mentors with whom the mentee may be interacting. The lead mentor may be the person whom the mentee knows best, trusts the most, or has the longest relationship. It is reasonable to expect that the lead mentor will have a level of parental intimacy with the mentee. Deep knowledge of, as well personal and professional investment in, a mentee can help the lead mentor organize other types of mentorship that will further the mentee’s goals. *Japanese example*

A *career mentor* is likely to be a senior researcher or clinician who can help the mentee with decision-making that will further his/her career goals. The career mentor may or may not know the mentee on a deep, personal level, but—possibly at the behest of the lead mentor—will be best positioned to facilitate the mentee’s professional (occupational) goals. It is reasonable to assume that the lead mentor will often also be the career mentor in Japan. *Japanese example*

An important role of the lead mentor is to introduce one or more *co-mentors* to the mentee. A co-mentor may be a younger senior clinician interested in taking a new mentorship role and with adequate time and enthusiasm to do so. The availability and need for co-mentorship will be largely based on available resources and needs of individual mentees. Co-mentors may eventually “evolve” into lead mentors as they become more skilled. *Japanese example*

A *research mentor* or *project mentor* may be the same person, or their tasks may be divided. In Japan, we often find that the project mentor (often a clinical supervisor in the specialty department) supplies clinical knowledge and support necessary to successfully complete a research project, while the research/scholarly mentor supplies mainly expertise stemming from research experience and teachable skills (epidemiology, biostatistics, data analysis, etc.). Depending on the level of continuity that the research mentor has with the mentee, he/she may be considered a *tutor*. In general, tutors have contact with mentees for shorter, limited periods of time—often just enough to teach a particular research skill—while research mentors, while of course playing a role in teaching skills, typically maintain a long-term relationship with a mentee throughout the duration of an ongoing project and often over multiple project-years. *Japanese example*

Figure 1. Many types of mentors, working together in a team-based approach, can serve the various needs of a mentee.

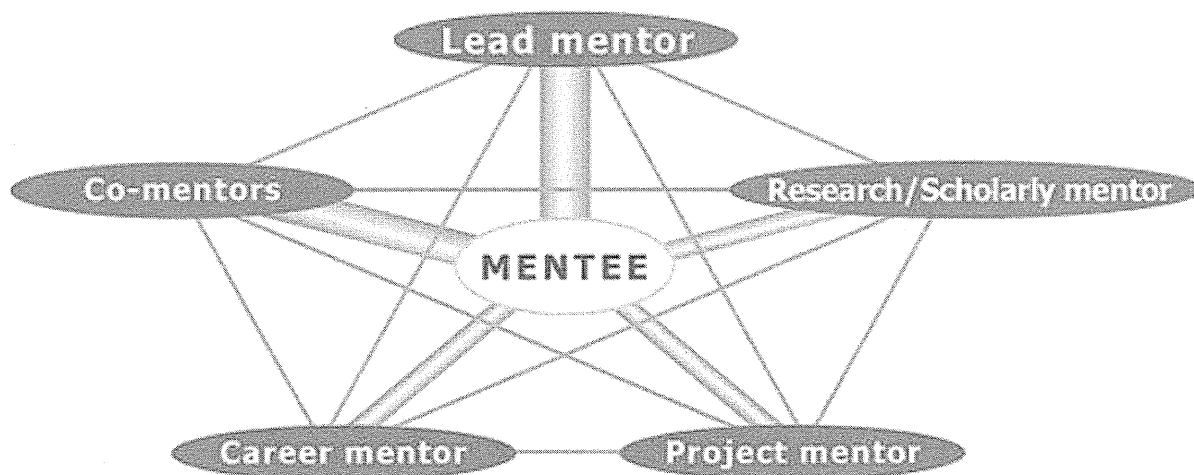
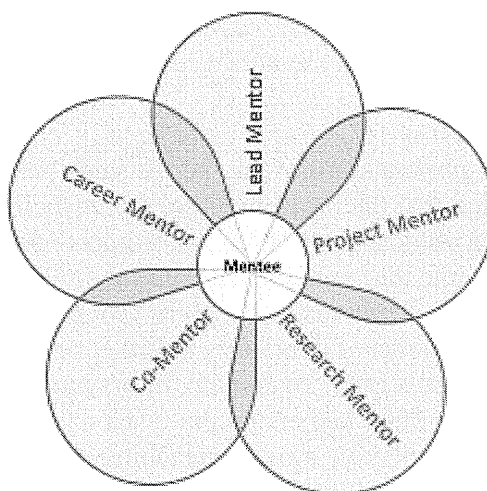


Image courtesy of Dr. Mitchell Feldman
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Figure 2. In Japan, expect significant overlap in roles of different mentors.



注意！ Figure 1 represents a theoretical model in an ideal situation in which academic resources are plentiful and enthusiasm abundant. As such, it may have little reflection on reality. There *can* be, *should* be, and *will* be significant overlap in these roles based on the resources available in any given institution, the skills of mentors, and most importantly the needs of mentees (Figure 2). This being said, it is crucial that team mentors have early communication about their respective roles in the development of the mentee, so as to (1) make the mentoring process more efficient for all and (2) prevent misunderstandings of “territory” between mentors.

Example of mentor conflict and possible resolution

In Japan, we often find that several of these roles—lead mentor, career mentor, and sometime even research mentor—may be assumed by a single, trusted senior physician, who may also be a clinical supervisor. While this can be an efficient way to deliver a unified message in an efficient way through a single trusted source, a less-than-optimal relationship can leave a mentee with nowhere to turn for other sources of information, guidance, or respite. While it is often not feasible or helpful to have multiple mentors interacting on a daily basis (“too many cooks in the kitchen”), mentees should be encouraged to find suitable co-mentors, who can provide additional consultation, advice, and a different and valuable perspective. Especially for Japan, mentors should be warned against treating mentees like property, to be held and protected within a certain territory, but rather as adult children who should be guided to explore the research environment around them.

Section 2. What is clinical research mentoring?

- Roles and Functions of the Clinical Research Mentor

Following from the above scheme, this guidebook will focus on the role of the Research Mentor and, within this, to the Clinical Research Mentor (CRM) specifically. While there is significant overlap between the roles of a Basic Science Mentor and a Clinical Research mentor, we anticipate several key differences--for example, those pertaining to laboratory hierarchy and workflow structures; an examination of these differences, while important, is beyond the scope of this guidebook.

In the most basic terms, the primary purpose of the Clinical Research Mentor (CRM) is to shepherd the mentee's research goals to fruition via (1) discussion and development of the mentee's clinical and research question(s), (2) understanding of and filling in of any gaps in skills and knowledge that might prevent a mentee from achieving research productivity, and (3) encouraging the mentee to disseminate his work to the scientific and academic communities. To this end, we can regard the CRM as having two basic functions, each with sub-roles:

I. *Advisory functions*: Seeing research through to the end (publication, presentation)

- d. *Clarification of research questions*: The most fundamental step in the research process for any clinical researcher is to decide on a research question that is appropriate and feasible for a clinical research project. Mentees should first consult with specialty supervisors and colleagues in the patient care setting in order to identify valuable **clinical questions** that warrant investigation. Nonetheless, as some clinical questions, while interesting, may not be amenable to rigorous methodologic study, the CRM plays an important role in refining (and often simplifying) these questions into a feasible **research question**. Rather than relying on specialized knowledge of the research topic or medical specialty, shaping a feasible research question will draw upon the CRM's expert knowledge of epidemiological methods, institutional databases, and available administrative and statistical support structures, as well as his/her experience with manuscript writing and submission.
- e. *Research organizer*: As a research project begins, the mentee will undoubtedly become focused on the small, often laborious, administrative tasks involved in protocol writing, IRB approval, and data collection and management. Using a variety of tools that will be discussed below, the CRM may help the mentee by keeping him/her on a regular schedule that takes into account the "big picture," administrative deadlines, individual progress goals, and time limits for abstract and manuscript submissions. As previous reports suggest that only 44% of research abstracts are eventually published, the importance of this role should not be underestimated (Scherer 2007).

f. Network facilitator: Success as a clinical researcher often goes beyond data collection and analysis, requiring a network of skilled experts in a variety of fields that can contribute to a research project. In fact, this is probably necessary, as a single mentor cannot realistically (or successfully) provide all the needed resources for a mentee to be a productive researcher. For example, a clinical research mentor might share his knowledge of online resources during a literature review, or may provide the mentee with an introduction to another researcher interested in the same methodology. The experienced research mentor will also share his/her personal network of colleagues and collaborators with the mentee, in order to develop future research projects that enhance knowledge, science, project, and career. The clinical mentor should also facilitate a young researcher's access to clinical databases at both the home institution, other domestic organizations, and even open access international data sources.

II. Tutor functions: Helping the mentee gain concrete skills and knowledge

- d. Study Design Skills:* The foundation of world-class clinical research lies in the first stages of its conception, particularly with the overall design of the study. As medical students in Japan are only beginning to gain this type of learning in the medical school curriculum, clinical mentors may be unable to offer help with this important, foundational step. Perhaps the most important role for a CRM is to help the mentee to understand the basic elements of thorough research. This may involve training the mentee at the elemental level including types of study (e.g., retrospective versus prospective, case-control versus cohort), or may involve higher level teaching such as helping the mentee calculate an appropriate sample size or rigorously consider sources of bias in his/her study. Often, the CRM will help the mentee improve his/her study by considering new patient populations, suggesting additional exclusions to minimize bias, or to change the study design altogether to better fit the existing data. Whether training a novice or advanced mentee, adequate time and dedication at this step is crucial for virtually all CRMs.
- e. Analytic Skills:* All data requires some form of analysis and it is likely that most mentees will feel rather lost at the outset of their research careers in terms of comfort with data analysis, none of which is currently taught in the medical school curriculum. Nonetheless, an important point to remember is that the role of CRM does not equate to biostatistician nor a data analyst. This is often a point of misunderstanding in Japan and should be made clear at the outset of the mentor-mentee relationship. As true excellence with data analysis, both quantitative and qualitative, can take years of formal education to master, it is unlikely that most CRMs will feel expert in all the myriad analytic methods available in modern clinical research. As such, the wise mentor will maintain familiarity with the basic analytic methods that can help their mentee in the early phases of their project; these might include univariate analysis, bivariate comparisons, regression analysis, as well as survey design. Beyond this, the crucial function of the CRM will be to guide the mentee towards the resources from which he/she gain the knowledge needed to complete a successful and thorough

analysis. These resources may include online classes (ex. the free, Web-based EDX lecture series), textbooks, and—most importantly-- research colleagues and collaborators.

注意 ! Before becoming a clinical research mentor, one should consider realistically whether one has obtained the basic skills in study design and data analysis needed to shepherd a young and inexperienced trainee through a research project. Passion for mentorship, while important, is insufficient to facilitate productive research. CRMs should take adequate time to hone their own skills prior to consenting to become a mentor for others.

- f. Writing and Presentation Skills:* Presentation of research at meetings, with subsequent publication, is the ultimate definition of success in modern clinical research. In order to maximize publication, good writing skills are important. An important, and often overlooked function of the CRM is as an editor for abstracts, posters, and manuscripts. It is likely that the CRM has the most experience than any other type of mentor in terms of having submitted a volume of both successful and unsuccessful manuscripts and abstracts; mentees stand to gain much from having access to this important well of experience. At centers of excellent clinical research in the United States, some high-power mentors will only accept mentees who can prove excellent (or at least adequate!) writing skills at the outset of their relationship. While this is overly severe and not appropriate to the Japanese context, CRMs should emphasize mentees to work on their writing skills early and often. While it may be easier for a mentor, for the sake of efficiency, to do the writing for the mentee, this should be avoided! Instead, the CRM should encourage the mentee to share their written work—protocol, abstract, poster, and manuscript—often with the CRM. In this way, useful feedback can be given to improve writing skills. For situations in which the mentor feels uncomfortable giving feedback on writing, for either Japanese or English, appropriate research colleagues and collaborators should be sought.

Benefits of Clinical Research Mentoring

Available literature on the efficacy of mentoring strongly suggests that mentoring pays a plethora of benefits, to both individuals and institutions, in the form of research productive and career satisfaction, reputation, and success. While there is substantial overlap, we have divided beneficiaries into three groups: mentors, mentees, and institutions.

IV. Benefits to Mentors

- a. Despite being a time-consuming endeavor when appropriately done, mentorship pays a multitude of rewards to mentors. **Personal rewards** include satisfaction with the role of shepherding a trainee through the system,

and has been likened by numerous experts as similar to the rewards of parenting. Many mentors express a sense of joy at training a new generation of young professionals who will carry the science of medicine forward, often carrying on a legacy of themselves. Mentors may find that mentorship inspires them to be more productive with their own unfinished projects. [Frei 2010]

Benefits to mentors also include more concrete **professional rewards**. Research productivity—along with clinical care and education—continues to be the primary benchmark for promotion at most academic medical centers in the United States and Europe. In the United States, research productivity helps both mentor and mentee in promotion from Assistant Professor to Associate Professor, Associate Professor to Full Professor, as well as in tenure decisions. As it is typical for the CRM to be included in the authorship of a project, the success of the mentor is tied in a tangible way to the success of the mentee. In addition to job promotion, many research universities such as Harvard and University of California at San Francisco (UCSF) also recognize excellent mentorship with prestigious faculty awards.

Finally, mentors may gain significant **financial rewards** from good mentorship, apart from those monetary awards obtained via job promotion and faculty recognition. In the United States, National Institute of Health (NIH) grants recipients are evaluated not only on their proposed projects, but also on success of past publications. Furthermore, several grant types are tied to appropriate mentorship, asking directly for past mentorship activities on the application. As the NIH considers research mentorship as a serious component of funding eligibility, demonstrable mentorship in research has become an important component of financial survival in the research arena. While this is perhaps less applicable to the Japanese context at the present time, the recent establishment of the Japan Agency for Medical Research and Development (AMED), which is anticipated to follow the National Institutes of Health (NIH) NIH funding model, may suggest similar funding considerations in the future.

V. *Benefits to Mentee*

- a. *Expanded knowledge and skills*: The most clear and obvious benefit to mentees is the knowledge and many skills that they can acquire from a skilled mentor. This includes elements outlined above, including the fundamentals of clinical epidemiology and clinical effectiveness research, as well as skills in data collection and management, data analysis (both basic and advanced), as well as training in manuscript writing and presentation. The CMR can also bequeath their network of knowledge resources and collaborators to the mentee, a gift that can potentially contribute to the mentee's success for years to come.
- b. *Upward career mobility through research*: Numerous previous qualitative studies of mentees have suggested that research mentors not only convey concrete skills to mentees, but also act as cheerleaders—an ongoing source of

energy, motivation, and guidance that enhances research productivity through support and confidence-building. While this is difficult to quantify, virtually all previous studies regarding mentorship have shown a relatively strong correlation after adjustment for other relevant factors between career success (most often faculty positions at academic medical centers) and past mentorship during the formative years of training.

- c. *Broader work-life perspectives*: Similarly, the guidance of a mentor may help a young and busy trainee see a broader perspective of life. This may, in turn, help trainees make better choices in the pursuit of family, career, position, and occupational specialty. As Japanese clinical trainees enter the workforce with relatively little real-world work experience, they likely have little perspective about career direction, career options, and so forth. A mentor on the clinical wards may give them a specifically, and perhaps falsely, narrow perspective on occupational trajectory. An enthusiastic and dedicated CRM has the potential to convey a more balanced perspective that focuses on broader opportunities in clinical research, academia, international careers, and public health.

VI. *Benefits to Institutions*

- a. *Reputation*: Throughout the world, centers of clinical excellence typically build their reputation on the quality of research they produce. Influential clinical research--research that is rigorous, thorough, and innovative--has the potential to build a strong reputation both domestically, as well as internationally, for the institution that produces it. Reputation as a supportive place for research undoubtedly leads to more productivity, as more and better researchers seek to join the organization, creating a virtuous cycle. The potential fruits of this virtuous cycle include benefits in (1) patient catchment, as patients often seek the "best" healthcare institutions based on reputation; (2) patient quality of care, as clinical research leads to healthcare advancement on the local level before dissemination on the national or international level; and (3) increasing opportunities for government-level funding, as national-level funding agencies are typically biased towards institutions with a proven track-record of research productivity.
- b. *Recruiting and retention (of trainees and staff)*: The virtuous cycle described above also has concrete benefits on the local level that extend beyond patient care. Especially for the rural community hospital, which might be struggling with trainee (junior and senior resident) recruitment and faculty retention, institutions that provide a supportive research training environment may find a benefit in recruiting and retention. While protected time for research, opportunities for research funding, and other interventions are also important, numerous case studies have shown that active mentorship programs may be a

cost-effective and relatively easy way for institutions to build a support environment for clinical research.

C. Mentor Development Programs

Institutions considering starting a program or curriculum (either formal or informal) in clinical research might consider a program for training mentors. This may be especially important at institutions for whom this is a “first foray” into clinical research and at which a core of skilled mentors does not already exist. Several institutions in the United States and Europe have, over the last two to three decades, developed mentor training programs. These modalities range from online “e-seminars” to single-day mentoring events to serialized workshops. Perhaps the best example of a formalized mentor training program is the Mentoring Development Workshop (MDP) at UCSF. Held every year over a course of 5 months, this monthly seminar series is required for all mid-level (Associate Professor) research mentors, most of whom are CRMs, prior to their beginning mentorship of junior faculty (Assistant Professor or below). Each seminar includes 2 1-hour lectures plus discussion; lectures consist of a variety of topics including optimal mentor characteristics, mentee selection techniques, introduction to funding pathways and institutional support systems, team management, diversity training, and time/goal management.

Section 3. Characteristics of Good Mentoring

A. What are the ingredients for a successful mentoring relationship?

When we imagine the characteristics of an ideal mentor, it is natural to think about excellent teachers and colleagues that we have experienced in our own lives and careers. From there, we often—through the veil of memory—attempt to dissect why or how they were a good teacher, often coming up with typical phrases such as, “He was kind” or “She was an excellent teacher.” However, as mentoring is a dyad relationship, when attempting to optimize the mentoring relationship, it is equally important to consider the characteristics and responsibilities that must be shared by the mentee as well. While most people can agree on a very basic set of human characteristics that lead to mentoring success such as kindness, responsibility, and dedication to learning, a review of the existing literature provides a more detailed set of descriptors that may help predict successful mentoring relationships. Based on data extracted from a series of semi-structured interviews, Straus et al. (2013) describe these basic tenets as follows:

1. *Reciprocity*: The dyad nature of the mentoring relationship should be respected in terms of recognizing that both mentor and mentee must have something to gain—whether personal reward or more concrete gains such as research publications-- from agreeing to enter into the relationship. An unbalanced relationship in which either the mentor or the mentee is the sole recipient of benefit can lead to unsuccessful outcomes.
2. *Mutual respect*: Good mentoring takes time. For most busy clinician-researchers, time is in short supply. Similarly, mentees may be equally pressed for time, juggling research goals with the demands of clinical training and patient care. As such, each party must respect the other’s time and effort—for example, expressed as showing up prepared for discussions, meeting deadlines for previously set goals, and returning emails in a timely fashion.
3. *Clear expectations*: The best mentoring relationships are ones in which confusion, miscommunication, and misunderstandings are minimized. In order to do this, both the mentor and mentee should freely communicate their expectations at the beginning of the relationship. A number of tools are available to facilitate this (and will be discussed in the next section), including mentoring contracts and the Individual Development Plan (IDP).
4. *Personal connection*: While mentoring is foremost a professional relationship, great mentoring relationships are enhanced when a personal friendship can also be formed. As mentors often play a parental role to mentees as well, optimal mentoring occurs when mentees feel that their mentor cares deeply about their personal and professional well-being. While many mentoring relationships develop organically, mentor-mentee matching—by age, gender, specialty, research and career goals--can play a useful role in facilitating optimal connections.

5. *Shared values*: Similarly, it is helpful if both mentor and mentee have a common base of thinking, from which to expand their mentoring relationship. While exactly matching values is difficult to find, probably unnecessary, and perhaps even deleterious due to absence of challenge, a “fairly common ground” has been reported to be useful in terms of professional and personal background. Again, mentor-mentee matching may be a helpful way to optimize this goal.

B. Are you prepared for being a mentor?

Why are skilled mentors skilled? Certainly a few individuals—those of exceptional collegiality, exceptional empathy, etc.—inherently possess a nature that lends itself to great mentoring. However, a far greater number become excellent mentors by strengthening their skill set, often through long experience in teaching and research. Ramani et al. (2006) offer twelve tips for developing effective mentors. The following list summarizes these in addition to those found in other literature.

1. *Communication skills*: Perhaps the single most important factor in being a good mentor is communication. A mentor should ask himself, “*Do I like to talk to other people and can I be an active listener?*” Can you teach and convey ideas in a positive and motivational way? In addition to teaching concrete skills, can you deeply and earnestly listen to the needs of your mentee, providing sensitive counselling and guidance to help him/her find the best way forward? Can you redirect a wayward resident in a positive way? Prior to mentoring, mentors will want to consider their own skills in this area and work to improve themselves so as to be the best mentor possible.
2. *Commitment*: As noted by Bettmann (2009) interest is essential to mentoring. Mentors should ask themselves “*Do I have enough interest in being a mentor?*” While mentors may be scarce in the current Japanese research environment, forcing disinterested staff to serve as mentors can lead to poor outcomes and drive mentees away from clinical research. Serving as a mentor is generally voluntary, and mentees are guided to seek out the most dedicated and passionate mentors.

However, passion is not enough. Prior to embarking on a mentoring relationship, mentors will need to ask themselves “*Do I have enough time to be a mentor?*” and then answer that question realistically, taking into account their own research, patient care, administrative, and personal responsibilities. Mentors should perhaps best think about their mentoring obligations as not “add on” work, but an important and integrated part of their professional commitments. As not all mentees are alike, mentors will also need to assess the work involved with a particular individual. Advanced trainees will generally require less time commitment, while those new to clinical research typically require more. Highly motivated mentees may require less time if relatively independent, but paradoxically more time if they seek considerable additional knowledge and guidance from you.

Though the desire to become a mentor may start out as noble and altruistic,

lack of commitment can lead to dissatisfaction and burnout for both mentor and mentee. Prevent burnout by realistically assessing why you would like to be a mentor. Ask yourself “*What benefits do I expect for being a mentor?*” As noted above, professional rewards such as compensation or protected time should be discussed with your institutional administration. Rewards such as publications or analysis of a dataset should be discussed openly with your mentee at the outset of the relationship.

Conflict of Interest: Mentors should be clear with themselves and their mentees about potential conflicts of interest, asking themselves, “*Am I in competition with my mentee?*” In the clinical research environment, potential conflict most often arises when dealing with issues of promotion, recognition, and authorship. For example, junior faculty who need more first author publications may feel resentful when a mentee takes charge of a project and takes first authorship. Bettmann notes that being able to subjugate personal interests to those of the mentee is an important characteristic of a good mentor. These are difficult situations to deal with and should be discussed as early as possible to avoid later misunderstandings.

3. *Clinical Research Experience:* Even if a mentor has adequate time and great passion, he/she should ask “*Do I have enough knowledge and experience to be an effective mentor?*” Experience is broad and may be defined as research experience, including publication and presentation; managerial experience and time management skills; and interpersonal experience and network, both inside and outside the institution. Clinical research experience is best gained by conducting studies at one’s institution, and gaining additional skills through formal programs, such e-learning skill development courses and Masters of Public Health (MPH) programs geared towards clinical research. Younger mentors, who still wish to actively contribute to mentees, may find that having a more senior “mentor advisor” is helpful in learning how to be an optimal mentor.

注意！New researchers should generally not be put in the role of being a research mentor, but rather a “peer mentor.” Those with little experience should not be paired with mentees with an equal amount of experience.

C. Strive for a “Best-fit” Mentoring Relationship

Difficult issues in mentoring, including dysfunctional mentoring relationships are well-described in the literature (Sambunjak 2006; Bickel 2011). This highlights the need for an adequate framework or strategy for mentor-mentee matching in environments that allow for this type of pairing. Based on the current work environment in Japan, we recommend that consideration be given to the following dynamics when matching mentors with mentees.

4. Gender: Gender remains an active issue in professional life in Japan. Despite

recent efforts by the government to address this, we must respect the reality in that, in Japan, women face unique challenges and barriers in their professional lives. These include special difficulties in work-family balance, child-rearing, and promotional opportunities. Gender-sensitive matching may help young female trainees better find mentors, male and female, that reflect the shared values and career goals that may be unique to women in the clinical research and practice arena.

5. **Age:** Despite changes over the last several decades, Japan remains a seniority-based hierarchical structure. Many people find it difficult to interact with individuals of significantly different age, when the age gap does not conform to traditional conventions. To minimize the confusion and awkwardness that might come from mismatched pairing, in general, mentors should be older in age compared to their mentees.
6. **Cultural and language:** As Japan continues to globalize, cultural and language differences may should be considered when pairing mentors with mentees. In general, mentees who wish to produce research in English, or who wish to present their work internationally, should be paired with a mentor competent in English and culturally aware of international standards in the topic of research.

D. General Advice for Mentors

There is wide consensus from numerous experts on the basic tenets of successful mentoring. Zerzan (2009) notes that “Good mentors value mentoring as part of their professional role and avoid focusing on their own professional needs and agendas, instead helping mentees develop theirs” and that “Good mentors take an interest in the mentee, provide both professional and personal support, prompt a mentee to take risks, and help open doors to opportunities.” At the risk of repetition, some perspectives on how to achieve these goals are outlined below:

1. Creating safe and welcome environment: the fundamental goal of a mentor should be to create a space in which the mentee, though challenged to produce good work, feels comfortable seeking the advice, counseling, and guidance of a trusted mentor. Mentors should continually strive to achieve this important goal. Bettman (2009) and several other authors note that accessibility—being routinely available to your mentee-- is an critical part of this environment. Betmann further notes that patience is an important skill for the mentor to develop, in order to create a safe and warm mentoring space.
2. Establishing a communication framework: good communication can be a key to excellent mentoring and increasing productivity of your mentee. Several methods are available to enhance communication, such as the PEARLS checklist (Partnership, Empathy, Acknowledgment, Respect, Legitimization, and Support). In particular, the idea of empathy is echoed by several other experts; Betmann describes this as having “personal insight into what the trainee is experiencing,” and using this special insight to guide and counsel. Acknowledgement, respect, and legitimization is summed up by some

authors as “open-mindedness,” defined as respect for a mentee’s needs as an individual, including working styles and career goals, even when they differ from the mentor’s.

3. Enhancing organization: As time is limited, meetings should be useful and conducted efficiently. Having a meeting plan with regularly scheduled appointments, reviewing goals of meetings, and ensuring that each meeting has a set agenda can be extremely helpful to keeping a project on track. When the mentor or mentee is unavailable to meet frequently “in person”, regular e-mail or telephone contact should be pursued between scheduled meeting times.

Similarly, Cho (2011) summarizes the overall characteristics of the ideal mentor well, a person who:

- 1) exhibits admirable personal qualities, including enthusiasm, compassion, and selflessness
- 2) acts as a career guide, offering a vision but purposefully tailoring support to each mentee
- 3) makes a strong time commitments with regular, frequent, and high-quality meetings
- 4) supports personal/professional balance
- 5) leaves a legacy of how to be a good mentor through role modeling and instituting policies that set global expectations and standards for mentorship

E. Advice for Institutions (Keyser 2008; Ramani 2006)

There is wide consensus that, while optimal mentoring starts with individuals (both mentor and mentee), that institutions can make an important and lasting difference by helping to create excellent mentoring environments. This can be done without a large investment in time or money by creating programs and practices to promote the characteristics of effective mentors and mentees (Table 1). Institutions can:

1. Offer faculty and trainees training in mentoring (ex. communication) skills
2. Address the demand for flexibility and less-than-full-time career options
3. Create mentor-mentee matching programs
4. Offer faculty rewards and recognition programs for excellence in mentoring

Table 1: Institution-level mentoring support by ease of implementation

Implementation	Development	Support	Reward
Easy	Mentor development courses	Peer support	Academic recognition
	Education/training on boundaries	Mentors for mentors	Non-financial reward
Challenging	Heightened awareness of	Referral Skills Resources	Protected Time

	biases (gender, age)		Financial reward
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(Adapted from Ramani 2006)

Section 4. Alignment

Once a mentor prepares for the characteristics that can optimize a good relationship, and a most optimal match has been made with a mentee, the process of mentoring a trainee through a clinical research project may begin in earnest. “Alignment” refers to the various strategies that allow for maximal efficiency in **keeping a project on track**, and helping to ensure that both mentors’ and mentees’ is spent in the best way possible. There are many ways that this can be done, however there appears to be wide consensus among experts that these strategies should be discussed and implemented early in the mentoring relationship, both to maximize time, as well as avoid later confusion. This section will highlight some of these alignment strategies.

1. Shaping a good mentee

The attitudes and characteristics of good mentee are perhaps second only to the characteristics of a good mentor. Ideally, a good mentee has an enthusiastic attitude, is a self-starter, focuses on his/her own self-improvement (knowledge, skills, etc.), and seeks guidance proactively. It is reasonable to assume, however, that a young mentee who has little prior clinical research experience may not have all of these characteristics in the beginning. As such, mentors have a unique opportunity to shape trainees into good mentees early in the relationship.

According to Straus et al., mentees should be expected to have the following five characteristics. As mentees cannot reasonably be expected to possess all of these characteristics in the beginning, we suggest that mentors explicitly discuss these points with their mentees at the beginning of the relationship.

- i. *Active listening*: Active listening requires trainees to be “present in the moment,” taking in mentor guidance and immediately translating this into next steps in the research project. Active listening also entails active question-and-answer in order to optimize one’s own understanding. Trainees should be open to feedback and discussion, taking these with a positive attitude towards self-improvement. As mentors are also encouraged to be active listeners, discussions that employ active listening skills should be lively and interesting!
- ii. *Respect for mentor’s efforts*: Mentors are often busy and volunteer their time to work with mentees; mentoring is typically a “labor of love.” It should be made clear to mentees in the beginning of the relationship that advice and input is given to the mentee from this standpoint. Nonetheless, it may not be reasonable for a mentee to follow all of a mentor’s suggestions. If a mentee disagrees with some piece of advice, he/she should not become defensive, but rather should formulate a thoughtful, polite, and articulate response as to why he/she thinks differently. In