IACUC Training: From New-Member Orientation to Continuing Education

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IACUC training is essential to ensure that the self-regulatory process is effective. Unfortunately, there are few official guidelines on methods to accomplish this goal. The author suggests multiple approaches for training new committee members and for the continuing education of the committee as a whole.

Since the passage of the Animal Welfare Act in 1966 (ref. 1), the conduct of animal research has changed dramatically, primarily in response to major changes in the animal welfare laws, regulations, and guidelines. In 1985, the Improved Standards for Laboratory Animals Act² and the Health Research Extension Act³ called for the promulgation of regulations and policy that would direct biomedical research institutions to establish Institutional Animal Care and Use Committees (IACUCs). These acts set the mandates for new United States Department of Agriculture (USDA) Animal Welfare regulations and the 1986 Public Health Service Policy on Humane Care and Use of Laboratory Animals (PHS Policy)⁴, both of which address IACUC roles, composition, and responsibilities.

Amazingly, and despite the critical and challenging responsibilities placed on IACUCs, neither the USDA Animal Welfare regulations⁵ nor the PHS Policy addresses IACUC training. While the need for a formal process of training and educating IACUC members is essentially intuitive, it was not until ten years later that PHS-assured institutions and institutions accredited by the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) International were clearly obligated to address IACUC training. The 1996 revision of the Guide for the Care and Use of Laboratory Animals⁶ (Guide) states: “It is the institution’s responsibility to provide suitable orientation, background materials, access to appropriate resources, and, if necessary, specific training to assist IACUC members in understanding and evaluating issues brought before the committee.” (The Guide is required by the PHS as a basis for developing and implementing institutional animal care and use programs and is used by AAALAC International as the basis for assessing and accrediting animal care and use programs.) Unfortunately, the directive and the guidance for IACUC training end there.

There is no doubt that since 1996 we have witnessed a rapid expansion in the development, availability, and variety of IACUC training programs and approaches, which provide institutions with a cornucopia of training options from which a given IACUC can select, depending on the members’ needs, resources, and available time.

Training at the Institutional Level

Institutions have developed a variety of customized approaches for orienting new IACUC members and for keeping veteran members informed of new developments and issues.

New-Member Orientation

Orienting members newly appointed to the IACUC often begins with personalized, one-on-one training usually provided by the IACUC Coordinator, the Attending Veterinarian (AV), and/or the IACUC Chair. During this orientation session, the new member receives an introduction to the overall roles, responsibilities, and expectations of the Committee; the applicable animal welfare laws, regulations, guidelines, and policies; and the procedures and mechanisms for ensuring compliance (for example, protocol review; semiannual program evaluation and facility inspection, reports, and recommendations to the Institutional Official; mecha-
nisms for addressing animal welfare concerns; and suspension procedures).

Orientation also covers the new member’s unique responsibilities. Depending on the type of appointment (e.g., Scientific Member, Community or Nonaffiliated Member, Attending Veterinarian, Non-scientist, Chair), the session addresses the member’s specific role and authority on the Committee. For example, a session with a newly appointed AV will often cover the AV’s direct reporting line to the Institutional Official and the AV’s responsibilities and authority with respect to maintaining a program of adequate veterinary care, consulting with investigators about methods and agents necessary to minimize pain and distress, along with the proper conduct of surgery and euthanasia, and developing and overseeing enrichment programs for dogs and nonhuman primates.

**Provision of “Core” Materials**

New members often receive several hard-copy reference resources or “core” materials that are essential or useful to IACUC operations. Depending on the IACUC’s legal obligations and voluntary commitments, core materials may include, but are not limited to, those listed in Box 1.

**Provision of “Specialized” Materials and Mentors**

Nonscientist Members, especially Community Members, may receive additional hard-copy resources. These can include a quality medical dictionary to help define unfamiliar scientific and medical terminology. Publications specific to the role of the Nonaffiliated or Community Member may also help the individual to better understand his/her unique role. Box 2 lists a number of publications that would be helpful to the IACUC’s Nonaffiliated Member.

Additionally, it is useful to arrange mentoring relationships between new members, especially the Nonscientist and Community Member, and one or more experienced IACUC members or affiliates. Designated IACUC members can provide one-on-one assistance and guidance outside of convened meetings and respond to new-member questions or concerns until such time as the new member feels comfortable with the process.

**Institution-Specific Materials**

Institution-specific IACUC membership information, operating procedures, policies, and forms are also often part of the new-member package. These may include the following:

- **IACUC Roster**;
- **Institutional Policy on Animal Care and Use**;
- **IACUC Charter**;
- **Animal Proposal Form**;
- **Institutional IACUC Handbook**;
- **PHS Animal Welfare Assurance**; and
- **Animal Care and Use Program Description (AAALAC International)**.

As an IACUC matures, it often supplements the regulatory requirements with its own unique policies, strategies, and standards for ensuring regulatory and voluntary compliance, which in turn become integral to the institution’s animal care and use program. Many IACUCs develop their own handbooks to manage and educate members regarding their bylaws, policies,
operating procedures, and standards. The IACUC handbook becomes fundamental to IACUC operations and serves a variety of purposes. Aside from providing bylaws, position statements and policies, operating procedures, and information resources, the handbook is usually customized, user-friendly, and an intelligible source of standards. It can help to ensure IACUC consistency in official actions, minimize redundancy in addressing issues, serve as an important training resource for new IACUC members, and provide a reference for incumbents. In addition, the IACUC handbook can serve as a tool to facilitate the semiannual review and evaluation of the institutional animal care and use program as well as a resource for developing and revising an institution’s PHS Assurance and AAALAC Program description.

Timing of IACUC Appointments

IACUCs may also incorporate other approaches to help ensure a well-trained and knowledgeable membership. Staggering appointment terms can ensure that at least half of the IACUC membership has a minimum of one to two years of experience at any given time. Introducing a future member to the IACUC process in advance of his/her appointment, arranging for a resigning member or other seasoned member to serve as a mentor, and allowing him/her to witness a semiannual program review and facility inspection before becoming empowered with the vote are also effective approaches. The IACUC may also take advantage of recent guidance from USDA and the Office of Laboratory Animal Welfare (OLAW) on the use of IACUC alternates

Training at the “World Wide” Level

The internet has become an exceptional information resource for IACUC members. In addition to providing access to training programs specifically designed to “jump-start” new IACUC members, the World Wide Web is becoming a vast forum in which regulated institutions can share IACUC policies, animal care and use guidelines, protocol forms, position statements, compliance mechanisms, and even PHS Assurances.

Web Training

Recently appointed members may benefit from one or more available internet training programs.

The “PHS Policy on Humane Care and Use of Laboratory Animals” tutorial (http://grants.nih.gov/grants/olaw/tutorial/index.htm) provides an excellent review of IACUC responsibilities and numerous links to relevant standards, regulations, guides, and other educational and training sites for ensuring institutional compliance with the PHS Policy.

“Working With Laboratory Animals” at the ResearchTraining.org website (http://www.researchtraining.org), provided by the Medical Research Service in the VA Office of Research and Development, includes three IACUC–specific web courses: “Essentials for IACUC Members,” “Working with the IACUC (Non-VA version),” and “Working with the VA IACUC.” Each course comes complete with an exam plus a printable version of a certificate of completion.

Internet Information Resources

IACUC members, especially those responsible for coordinating and clarifying regulatory obligations and alerting members to new issues and regulatory changes, may rely on government websites as well as other websites for easy access to laws, regulations, publications, interpretative rules, FAQ sheets, guidance, and related news.

The USDA, Animal and Plant Health Inspection Service, Animal Care home page (http://www.aphis.usda.gov/ac/) includes links to order forms, application kits for licensing or registration, annual reports, press releases, Federal Register notices, Policy Manual, a question and answer page, and Freedom of Information Act (FOIA) animal care inspection reports.

The OLAW home page (http://grants.nih.gov/grants/olaw/olaw.htm) includes the following links: News Flashes, Policies and Laws, Guidance, General Information, Assured Institutions, Useful Links, Web Resources for IACUCs, and Contacts

Information Resources for IACUCs

Information Resources for Institutional Animal Care and Use Committees 1985-1999 (ref. 8) is a comprehensive collection of publications and information including: U.S. Government Principles, Regulations, Policies and Guidelines; Agency Directives for Federal Fundholders; Professional Guidelines; World Wide Web Resources; Articles and Bibliographies; Primary References; Selected Software Providers; Organizations.

Animal Welfare Act Interpretive Summaries

Are narratives by USDA that endeavor to clarify or interpret the existing Animal Welfare Act (AWA) regulations including those relating to the Responsibilities and Functions of the Attending Veterinarian; Enhancement for Primates; Exercise of Dogs; Field Research; Functions of the Institutional Official; Functions of the Principal Investigator; Institutional Animal Care & Use Committees; Record Keeping for Dealers & Exhibitors; Record Keeping for Research Facilities; and Training for Research Facility Personnel.

The Association for the Assessment and Accreditation of Laboratory Animal Care International (AAALAC International, http://www.aaalac.org/index.html), a private nonprofit organization that promotes the humane treatment of animals in science through a voluntary accreditation program, offers information about AAALAC; the accreditation program; program status evaluation; position statements and policies; AAALAC news; Connection newsletter; animal care and use resources; and international links.

In response to an increasing quantity and variety of relevant information on the internet, several websites function by capturing, sorting, and categorizing links to IACUC internet resources. These websites improve the efficiency and effectiveness of locating relevant information.
The American Association of Laboratory Animal Science (AALAS) maintains IACUC.ORG (http://www.iacuc.org), an extensive IACUC resource library consisting of links to international and domestic websites that address an array of subjects of necessity and interest to IACUCs. The site sorts and catalogs relevant web pages and provides direct links to websites on alternatives; literature databases; federal laws, policies, and guidelines; institutional guidelines, policies and plans; example forms and documents; journals and publications; meetings on animal care and use issues; organizations; regulatory sites and listservs; laboratory animal care and use training; IACUC training; and web libraries.

The OLAW website contains a list of “Useful Links” (http://grants.nih.gov/grants/olaw/links.htm), another extensive IACUC resource that provides direct links to websites on alternatives; literature databases; government agencies; laws and regulations; organizations; publications and reports; resources; and training.

### Training at Federal, Organization, and Association Levels

Multiple venues for IACUC training opportunities exist outside of the institution. These programs are available through state and regional associations, federal agencies, as well as major biomedical research associations and organizations.

#### Federal Training Programs

Through its National Animal Welfare Education Program, the Office of Laboratory Animal Welfare sponsors workshops on implementing the PHS Policy. In keeping with its “Functional Statement,” OLAW offers and supports “programs of clarification and guidance for both the Federal and non-Federal sectors with respect to the use of animals in research, directs the development and implementation of educational and instructional programs, and generates educational resource materials.”

In conjunction with hosting institutions and organizations, OLAW supports programs tailored to the needs of IACUCs (http://grants.nih.gov/grants/olaw/workshop.htm). These workshops target individuals who share responsibility for ensuring a sound institutional animal care and use program, including IACUC members. The OLAW workshops cover topics that are timely and important to IACUCs and include “ARENA IACUC 101,” “Everything You Ever Wanted to Know about the IACUC But Were Afraid to Ask,” “Advancing IACUC Education and Research Animal Well-Being,” “IACUC 2001: A Research Odyssey,” “Maintaining the Balance: The IACUC’s Role in Facilitating Compliance,” “The Effective IACUC: A Workshop on Programmatic Management,” and “Nonaffiliated and Nonscientist Members of IACUCs.”

### National Biomedical and Ethical Associations and Organizations

Several national biomedical research and/or ethics organizations offer multiple-day IACUC conferences, one-day workshops, and IACUC publications.

The American Association for Laboratory Animal Science (AALAS, http://www.aalas.org) is a member organization and forum for the exchange of information and expertise in the care and use of laboratory animals. AALAS presents an annual conference with topics that cover the field of laboratory animal science and medicine including workshops, seminars, roundtable discussions, and platform sessions of value to IACUCs.

Applied Research Ethics National Association (ARENA, http://www.primr.org/arena.html) is a national membership organization that addresses issues relating to the protection of human subjects, the humane care and treatment of animals, scientific misconduct, ethical decision-making in health care, and other ethical issues pertaining to biomedical and behavioral research. In conjunction with its sister organization, Public Responsibility in Medicine and Research, ARENA delivers two annual conferences, one for Institutional Review Boards (IRBs) in the fall and one for IACUCs in the spring. The ARENA IACUC conference is best suited for entry-level and newer IACUC members and affiliates.

With the support of OLAW, hosting institutions and other cosponsors, ARENA offers “IACUC 101,” a full-day didactic and interactive training course for new and seasoned IACUC members, IACUC affiliates, and individuals responsible for their institution’s animal care program. The course is presented several times throughout the year across the United States including the annual ARENA IACUC conference. The course imparts a basic yet comprehensive overview of the laws, regulations, and policies that govern the humane care and use of laboratory animals supplemented with examples and approaches for successful and effective administration. The materials and information provided during the course are applied during the afternoon session, when students are challenged to consider, deliberate, and develop action plans for a variety of potential IACUC scenarios. Students receive an extensive resources manual as well as copies of relevant laws, regulations, policy, and guides. Plans are underway to introduce “IACUC 201,” an advanced training program to meet the training needs of more experienced IACUC members.

Public Responsibility in Medicine and Research (PRIM&R, http://www.primr.org) is a nonmember organization “committed to the advancement of strong research programs and to the consistent application of ethical precepts in both medicine and research.” It delivers two annual conferences designed to address ethical and procedural issues surrounding IRBs at its fall conference and IACUCs at its spring conference. The PRIM&R IACUC conference is best suited for IACUC members and affiliates who have modest to advanced training or experience.

Scientists Center for Animal Welfare (SCAW, http://www.scam.com) is a non-profit educational membership organization whose mission is to promote humane care, use, and management of animals involved in research, testing, or education.
It delivers biannual conferences, multiple seminars, and workshops, as well as publications. SCAW recently announced the debut of the “IACUC-Advanced Workshop” for IACUC members with previous entry-level IACUC training (e.g., ARENA “IACUC 101”) or at least three years experience. The format of the one-day course will be small-group discussions of specific, complex topics that are relevant to IACUC functions, such as advanced protocol review and unrelieved pain and distress.

**Biomedical Research Support Associations and Other Groups**

Several state biomedical research associations and other nonprofit organizations offer training workshops for IACUCs annually or more frequently.

Americans for Medical Progress (AMP, http://www.amprogress.org) is a nonprofit educational foundation that tracks progress involving animal-based biomedical research, activist opposition to such studies, and developments concerning the use and replacement of animal models. AMP promotes fair and accurate media coverage about the responsible use of animals in research. AMP provides IACUC members and other individuals with presentations and briefings on the challenges posed by activists, as well as crisis-management counsel for individuals or institutions targeted by animal rights activists. In partnership with state biomedical research support organizations, AMP hosts meetings across the US designed to develop an information and resource sharing network among academic, industry, and private biomedical research facilities.

The New Jersey Association for Biomedical Research (NJABR, http://www.njobr.org) is a statewide coalition dedicated to the improvement of human and animal health through biomedical research. NJABR offers “IACUC: The Charge and The Challenge,” an annual, one-day seminar for IACUC members and affiliates. Program participants include representatives from major research institutions in New Jersey and many neighboring states, as well as federal regulators. The program includes two plenary sessions, didactic workshops for new members, and facilitated groups for addressing complex issues. Future seminars will include a special track for IACUC administrators.

The Massachusetts Society for Medical Research, Inc. (MSMR, http://www.msmr.org) is a nonprofit science education organization that promotes and enhances biomedical and biological research, including the proper care and use of animals, for the improved health and well-being of people, animals, and the environment. MSMR offers “IACUCs: Rights, Roles & Responsibilities,” an annual program lasting a day and a half that includes interactive, hands-on training. The program is designed for MSMR members and members of the scientific community. Massachusetts educators and MSMR member institution unaffiliated members are invited to attend free of charge.

The Michigan Society for Medical Research (MISMR, http://www.mismr.org) is a nonprofit science educational organization that promotes community understanding of biomedical research and testing, including the appropriate use of animals. MISMR presents the “Annual Institutional Animal Care and Use Committee Forum,” a one-day program devoted to IACUC issues that targets all IACUC members and affiliates of all levels of training and experience.

The Ohio Scientific Education & Research Association (OSERA, http://www.osera.org) is an educational consortium of universities, hospitals, voluntary health organizations, and corporations whose goals include education in the human and animal benefits gained from animal research. OSERA presents one-day, on-site, entry-level, or customized IACUC training at member organizations.

The Washington Association for Biomedical Research (WABR, http://www.wabr.org/) is a nonprofit organization that advances biomedical research for humans and animals through public education and service to the scientific community. WABR offers “Building an Effective IACUC: The Basics and Beyond,” an annual one-day program that embraces a variety of topics of interest to IACUC members and affiliates. The program includes core and advanced IACUC modules, IACUC dilemmas, hot regulatory topics, and bioethics of animal use. The program provides excellent opportunities for the exchange of ideas between individuals who serve in a variety of different IACUC capacities and who come from an array of different biomedical research institutions across the US.

**Continuing Education and Training**

IACUC training and education do not end with an in-house orientation or a one-day workshop. While these programs are valuable, the greatest IACUC training is probably achieved through participating in the IACUC process itself. Continuing education is essential, however, to ensure that IACUC members remain aware of their responsibilities, reassess their effectiveness, recognize better and more efficient ways to ensure humane research animal care and use, and stay abreast of changing standards and regulations.

Few IACUC members are able to allocate a tremendous amount of time to reviewing the laws, regulations, and guidelines, and attending courses and conferences may not always be possible or timely. More often than not, IACUC members have other job responsibilities that demand the major portion of their time. Time to attend additional in-house or external training programs is extremely limited and not always available. So how do IACUCs offer continuing training and education without imposing an additional and excessive burden on their Committee members? Several relatively simple and innocuous approaches are possible.

**Provision of Contemporary Publications and News**

A small portion of convened meetings may be dedicated to “continuing education.” Distributing a relevant and timely contemporary publication may help facili-
tate discussion and training. The nature of the topic should be based on the needs of the IACUC at the given time. For example, if the IACUC is reassessing standards for rodent surgery, a paper on aseptic techniques in survival rodent surgery will prove both timely and helpful. Before a scheduled semiannual program review, the IACUC members may benefit from discussing the AAALAC International Connection article, “The most common Deficiencies found ....” (http://www.aaalac.org/deficient.htm), or some similar article. If a pending regulatory change will affect IACUC operations or the conduct of animal research at the institution, a related publication would be a prudent choice.

Because IACUC members may not have time to read additional paperwork either during or outside of the meeting, it is helpful to designate one or two IACUC members to present a brief overview of the publication and its potential implications for discussion. The “continuing education” portion of a meeting may also serve as an opportunity for members that do attend relevant workshops and conferences or routinely keep abreast of the changing regulatory climate to present a synopsis to the membership. In either case, the information should be timely, interesting, and not overwhelming.

**Scenarios**

Another good training tool is the IACUC “scenario,” which challenges the Committee Members to apply their knowledge of the laws, regulations, guidelines, and policies. The scenario should describe a possible, if not probable, IACUC situation or development, preferably one that necessitates careful thought, deliberation, and a final action plan. Good sources of scenarios include Lab Animal’s monthly “Protocol Review” column and the ARENA “IACUC 101” Resources Manual, which includes approximately 50 “scenario shorts,” of which 10 are covered during the course.

**Listservs and Information Exchange Forum**

There are several listservs and Internet forums that provide a medium for the exchange of IACUC-relevant information and/or related news.

The “ARENA Listserv” (http://www. primr.org/arena.html) is a closed listserv dedicated to IACUC and IRB issues including new federal regulations, ethical dilemmas of animal or human subjects research, challenges faced by IACUC and IRB administrators, and other important issues relevant to ARENA and PRIM&R. It is a mailing-list program for group communication that is open to ARENA members only.

AALAS COMPMED (http://www.aalas. org/association/links/compmed.htm), or Comparative Medicine Discussion List, is a restricted listserv for discussing the topics of comparative and laboratory animal medicine. Matters of specific interest to IACUCs are included in the gamut of laboratory animal science and medicine topics.

AALAS “IACUC-Forum” (http://www. iacuc.org/IACUC_Forum.asp) is a closed listserv devoted to discussion of issues relating to laboratory animal research and IACUCs in particular. It is a mailing-list program for group communication that is open to subscribed AALAS institutional members only.

OLAW Listserv (http://grants2.nih.gov/ grants/olaw/references/list.htm) is a list designed by OLAW for posting announcements, guidance, publications, and upcoming education programs and conferences related to implementing the PHS Policy. It is not a discussion list. It is open to all interested individuals. Subscribers are notified by e-mail of new information posted to the OLAW listserv.

SCAW “IACUC TALK” (http://www. scaw.com/forum.html) is a forum for IACUC members to discuss protocols, research animal welfare, and other issues. It is not a mailing-list program but a forum in which comments and questions are posted. Subscriptions are free and open to everyone.

**Summary**

Time and money are well spent on training new members and providing continuing education for all members, because a well-trained IACUC is efficient and effective. There are a number of quality training options available to IACUCs. What combination of training programs and approaches are best will depend on the needs of the individual members, the needs of the Committee as a whole, the breadth of the institution’s animal care and use program, and available time, as well as human and monetary resources. Without a well-trained and knowledgeable IACUC, achieving and maintaining a quality animal care and use program is simply not possible.

**References**


