



**National Center for
Research Resources**

NATIONAL INSTITUTES OF HEALTH

FINAL REPORT

Division of Comparative Medicine Training Program Evaluation

6701 Democracy Blvd., Bethesda, MD 20817

Evaluation of September 10, 2007

Presented to the NARRC on May 14, 2008

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Abbreviations used

AAVMC - American Association of Veterinary Medical Colleges; DACLAM- Diplomate of the American College of Laboratory Animal Medicine; DACVP- Diplomate of the American College of Veterinary Pathologists; DCM - Division of Comparative Medicine; DVM - Doctor of Veterinary Medicine, used interchangeably with DMV or BVSc; JD - Juris Doctor; MD - Medical Doctor; MPH - Master of Public Health; MS - Master of Science; NARRC - National Advisory Research Resources Council; NAS- National Academy of Sciences; NCRR - National Center for Research Resources; NIGMS - National Institute of General Medical Sciences; NIH - National Institutes of Health; NRSA - National Research Services Award; PhD - Doctor of Philosophy.

Purposes and objectives of the evaluation

Extramural programs funded by NIH Institutes and Centers periodically are evaluated by experts in the field to ascertain successes and suggestions for improvement. The Division of Comparative Medicine (DCM) of the National Center for Research Resources (NCRR) funds three types of Institutional National Research Service (NRSA) awards. These are the T35 – Professional student short-term summer research training award (described in NIH PA-05-117), the T32 One-year hypothesis-based, animal-oriented research training for veterinary students (PA-06-468 and PA-01-138), and the T32 Three-year post-DVM research training for highly qualified veterinarians (PA-06-468). The NRSA T32 and T35 programs funded by DCM of NCRR were evaluated by 5 experts in a one-day meeting on September 10, 2007. The objectives of the Evaluation Panel were to: 1. Identify successes, challenges, and needs for the NCRR-DCM NRSA Training Program; 2. Assign future priorities assuming varied funding climates, and; 3. Recommend potential new approaches and improvements.

Summary of presentations and discussion

Franziska Grieder, DVM, PhD, Director of the Division of Comparative Medicine, NCRR welcomed the attendees who in turn introduced themselves. Andrew Maccabe, DVM, MPH, JD of the American Association of Veterinary Medical Colleges presented a talk entitled "Report on NAS Studies and 2007 AAVMC Conference." Franziska Grieder, DVM, PhD; William Watson, DVM, MS, DACLAM; and Ray O'Neill, PhD then presented an "Overview of the NCRR-DCM Training Program." Three Directors of DC/NCRR-supported Training Programs across the United States then addressed the evaluation panel. The three Directors were: James Fox, DVM, MS of the Massachusetts Institute of Technology; Cathy Carlson, DVM, PhD of the University of Minnesota; and Lisa Freeman, DVM, PhD of Kansas State University. Ray O'Neill, PhD of DCM led a discussion of "Future NIH-wide Changes, and Long-term Challenges to NCRR-DCM's Training Program." William Watson, DVM, MS, DACLAM of DCM led a discussion of "Potential Improvements to the DCM Training Program."

The Working Group was charged by Dr. Grieder to; 1. Identify successes, challenges, and needs for the NCRR-DCM NRSA Training Program; 2. Assign future priorities assuming varied funding climates, and; 3. Recommend potential new approaches and improvements.

The Evaluators then met in closed session until an Exit Briefing before the Adjournment on September 10. After returning home, the Evaluators met via telephone and email to refine the draft they had prepared on-site.

On May 14, 2008, Dr. Yilma (member of the National Advisory Research Resources Council (NARRC) and Chair of the Working Group) presented the group's conclusions and recommendations to the NARRC and NCRR senior staff. The final report herein was discussed and accepted.

Recommendations for the individual T35 and T32 programs

There was a very strong consensus by the committee members that veterinarians trained in basic and applied research can play a significant role in government, academic, and industrial organizations that are advancing the nation's health. The veterinary community is relatively small compared to that of the medical community. Therefore, the challenges of identifying, recruiting, training, and retaining veterinarians who can fill these roles are quite considerable. It was thought that there was a lack of role models for pre-DVM or post-DVM trainees outside of the traditional clinical practice.

The Committee determined that the NCRR programs were generally well designed and correctly aimed at training DVM students or DVM graduates. Unrelated to the evaluation of the current NCRR training programs, a question was raised whether to strengthen or expand all NIH and non-NIH programs for those students planning to become veterinarians for the sole purpose of pursuing a career in research.

I. T35 summer student training program

This program is widely used for short term support of students during the summer to provide them with research experience. In addition, students receive mentoring and advice about the opportunities for advanced studies and planning for a research career.

A. Successes

1. As most veterinary students do not have broad exposure to research opportunities prior to entering veterinary school, this is clearly an excellent method for introducing the students to research.
2. This program shows students the opportunities for going into biomedical research programs and government or public service.
3. Students are exposed to various career options and pathways available in research (basic research, translational research, etc.).
4. The summer symposium (supported in part by the R13 grant from NCRR) clearly motivates students and faculty, informs them of opportunities in research, and allows for networking and sharing of experiences.
5. The strength and diversity of research programs among veterinary schools is highly variable. Some schools might not have the infrastructure to offer more than a minimal research experience.

Thus, students from these schools could be provided opportunities for summer research training programs at other universities with excellent research programs, even if they don't have veterinary schools.

B. Problem areas and issues to consider

1. T35 programs should include ways to promote knowledge of research opportunities including career counseling for advanced training in research, selecting the appropriate lab and mentor for training, applying for support, utilization of websites and other resources to obtain information relevant to their research interest.
2. One of the major problems in veterinary schools is a shortage of highly qualified mentors with active, well-funded research programs. Attention should be paid to the quality of the mentors and research programs where the students are placed. In situation where this cannot be achieved, sending students to a different university for training is advised.
3. More attention should be paid to making T35 students aware of all possible research programs (i.e., other T35 and T32 programs from non-NCRR institutes, private funding, industry). This could be met by adding appropriate weblinks to the NCRR website.

II. Predoctoral T32 training program

A. Successes

1. The program underscores the importance of encouraging DVM students to pursue a career in biomedical research. This is a relatively new program, and its success is not entirely clear at this time. The difficulty that has been identified is that students are very reluctant to interrupt their veterinary studies for a year to do research.
2. The NCRR T32 predoctoral program can provide one year of support for a combined DVM/PhD program, which is another way in which talented students can be identified and trained. At present, only one NIH program (the MD/PhD Medical Scientist Training Program of the National Institute of General Medical Sciences) provides multi-year support to one grantee institution that enrolls a few exceptional students concurrently acquiring DVM/PhD degrees. Such support allows leveraging resources and strengthening DVM/PhD programs.

B. Problem areas and issues to consider

1. Taking a year off in the middle of the DVM degree program does not give a clear advantage to students who would like to pursue a career in research. It is not clear that this is a much better program than a T35.
2. Perhaps a more explicit DVM/PhD combined program support from NCRR would have a greater impact in helping DVM students to pursue a career in research.

III. Postdoctoral T32 training program

A. Successes

1. This is a strong and highly successful NCCR-funded veterinary training program that allows the best DVM graduates to pursue advanced studies. The success rate of the students in applying for and receiving funding from NIH is excellent. The program has succeeded in producing stellar veterinarians currently conducting excellent research projects.

B. Problem areas and issues to consider

1. The rigor of the research experience should be given strong consideration in the review process and in the assigning of training slots (utilization of collaborating funded research programs; peer-reviewed projects; etc.).
2. Linkage of the postdoctoral NCCR T32 to a PhD program is clearly an option. However, the PhD program is not considered necessary, as long as the program provides training that leads to a successful career in research or other leadership activities.

General recommendations

Veterinarians trained in basic and applied research can play a significant role in government, academic, and industrial organizations engaged in advancing the nations health. The veterinary community is relatively small compared to that of the medical community, and there are considerable challenges of identifying, recruiting, training, and retaining veterinarians who can fill these roles. There are a lack of role models for pre-DVM or post-DVM trainees outside of the traditional clinical practice. The Committee determined that the NCCR programs were generally well designed and correctly aimed at training DVM students or DVM graduates. The committee members had the following recommendations:

1. The committee suggests conducting an analysis of the predoctoral T32 program in 4-5 years (once the outcome metrics from the program started in 2002 become available) to determine how well it facilitates a pathway to a research career. If the predoctoral T32 program is not particularly effective in promoting research careers, then alternatives should be considered by NCCR (e.g., providing 2-3 years of support for the research portion of a combined DVM/PhD).
2. For all NCCR training programs, greater attention should be given to informing students about how to choose a research training program (i.e., how to recognize excellent research programs, choose a mentor, what to expect from a program). This is not a criticism of the current program, but a recognition of the fact that mentors and examples of DVM graduates in the different tracks may be rather small in number compared to some other health disciplines.
3. Greater attention should be given to coordinating sources of information on training opportunities for veterinarians so that these opportunities are cross-referenced. One option is an enhanced web site to provide a central source of information.
4. NCCR should consider using existing NIH mechanisms (such as K07, R25 grants) to encourage providing more research information in the veterinary curricula. This would allow professors with

research interests to enhance the quality and depth of their courses by including more emphasis on basic mechanisms of disease and biomedical research.

Contact information

Please consult the Roster in Appendix I that lists the Evaluators, Speakers, and NCRR staff who attended. Inquiries should be directed to Franziska Grieder, DVM, PhD, Director, DCM, NCRR, NIH, 6701 Democracy Blvd, Rm 948, Bethesda, MD 20892-4874, 301-435-0744, fax 301-480-3819, griederf@mail.nih.gov. For more information about NCRR, please visit www.ncrr.nih.gov.

Appendix 1: Agenda

- 8:00 a.m. - Welcome and Introduction Franziska Grieder, DVM, PhD
- 8:10 - Report on NAS Studies and 2007 AAVMC Conference Andrew Maccabe, DVM, MPH, JD
- 8:40 - Overview of the NCRR-DCM Training Program Franziska Grieder, DVM, PhD; William Watson, DVM, MS, DACLAM; Ray O'Neill, PhD
- 9:50 - Presentations of Three Individual Programs
PostDoctoral T32 James Fox, DVM, MS
PostDoctoral T32 Cathy Carlson, DVM, PhD, DACVP
PreDoctoral T32 and Summer Programs - Lisa Freeman, DVM, PhD
- 10:50 - Future NIH-wide Changes, and Long-term Challenges to NCRR-DCM's Training Program
Ray O'Neill, PhD
- 11:10 - Discussion of Potential Improvements William Watson, DVM, MS, DACLAM; Attendees
- 11:50 - Charge to the Working Group Franziska Grieder, DVM, PhD
- 12:00 - Closed Session Evaluators
- 2:30 p.m. - Exit Briefing Evaluators and NCRR Staff
- 3:00 - Adjournment

Appendix 2: Roster

EVALUATION PANEL MEMBERS

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