
NATIONAL COORDINATOR FOR AQUACULTURE INADs/NADAs¹

Project *Progress Report* for the Period
July 15, 2004 to August 31, 2007

NCRAC FUNDING: \$64,000 (July 15, 2004 to August 31, 2007)

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PROJECT OBJECTIVES

- (1) Ensure effective communications among groups involved with Investigational New Animal Drug/New Animal Drug Applications (INADs/NADAs), including Canada.
- (2) Serve as an information conduit between INAD/NADA applicants and the U.S. Food and Drug Administration's Center for Veterinary Medicine (CVM).
- (3) Identify and encourage prospective INAD participants to become involved in specific investigational studies and NADA approval-related research.
- (4) Seek the support and participation of pharmaceutical sponsors for INAD studies and NADAs and coordinate with INAD/NADA sponsors to achieve CVM approval more quickly.
- (5) Guide prospective and current INAD holders on the format for INAD exemption requests and related submissions to CVM.

- (6) Identify existing data and remaining data requirements for NADA approvals.
- (7) Review, record, and provide information on the status of INADs and NADAs.
- (8) Encourage and seek opportunities for consolidating the INAD/NADA applications.
- (9) Coordinate educational efforts on aquaculture drugs as appropriate.
- (10) Identify potential funding sources for INAD/NADA activities.

ANTICIPATED BENEFITS

Investigation and approval of safe therapeutic and production drugs for use by the aquaculture industry are some of the highest priorities currently facing the industry. At present, only a few approved compounds are available to the industry and further development of the aquaculture industry is severely constrained by a lack of approved drugs essential for treating more than 50 known aquaculture diseases. CVM has afforded the aquaculture industry

¹NCRAC has funded two NADA Coordinator projects. The termination report for the first project is contained in the 1999-00 Annual Progress Report. This progress report is for the second NADA Coordinator project. Ted R. Batterson serves as the facilitator for this project interacting with a steering committee in overseeing the Coordinator's activities.

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throughout the United States with a “window of opportunity” to seek approval of legal drugs to be used in their production practices. The need for additional drugs is great, but securing data necessary to satisfy the requirements of CVM for drug approval is time consuming, costly, and procedures are rigorous. The INAD/NADA process is the one method that allows the industry to provide CVM with data on efficacy and also aids producers in their production practices.

Coordination and educational efforts directed toward potential INAD/NADA applicants will save time and effort for both the industry and CVM. The National Coordinator for Aquaculture New Animal Drug Applications (National Aquaculture NADA Coordinator) serves as a conduit between an INAD/NADA applicant and CVM. The National Aquaculture NADA Coordinator helps to alleviate time demands on CVM staff, thus allowing more time to process a greater number of applications as well as increasing the breadth of research endeavors within the industry. The grouping of INAD applicants should help to alleviate redundancy, amalgamate efforts, and increase the amount of efficacy data, all of which should result in greater progress toward developing available, approved therapeutic and production drugs.

PROGRESS AND PRINCIPAL ACCOMPLISHMENTS

MAJOR APPROVALS

- ▶ Original NADA approval: 35% Perox-Aid[®] for the control of mortality due to (1) saprolegniasis on all finfish eggs, (2) bacterial gill disease on all freshwater-reared salmonids, and (3) external columnaris disease on all coolwater fish and channel catfish (approved January 11, 2007)
- ▶ Supplemental NADA approval: Aquaflor[®] for the control of mortality in all freshwater-reared salmonids due to coldwater disease (Approved March 19, 2007)
- ▶ Conditional approval: Aquaflor[®] for control of mortality in channel catfish due to columnaris disease associated with *Flavobacterium columnare* (Approved April 18, 2007)
- ▶ Abbreviated NADA approval: Tetroxy Aquatic[®] for marking in finfish fry and fingerlings (Approved April 20, 2007)
- ▶ Abbreviated NADA approval: Formacide-B[®] (generic copy of Parasite-S[®], sponsored by Western Chemical, Inc.) for control of certain external parasites on finfish and shrimp and for the control of certain fungi on finfish eggs (Approved July 17, 2007)

CHLORAMINE-T (HALAMID[®])— EXTERNAL ANTIBACTERIAL

Two initial label claims close to completion: (1) control of mortality due to (1) bacterial gill disease on all freshwater-reared salmonids and (2) external columnaris disease on walleye.

- ▶ On September 15, 2006, CVM granted Minor Use and Minor Species (MUMS) designation to Axcentive SARL, the sponsor of HALAMID[®], for the following label claim for the control of mortality in freshwater-reared finfish (except freshwater-reared salmonids) due to bacterial gill disease.
- ▶ In November 2006, Axcentive SARL submitted the following to CVM: (1) Guidance for Industry Document (GFI) #152 on microbial food safety, (2) GFI document #159 on the safety of residues in human food for all fish, and (3) labeling.
- ▶ On April 13, 2007, the Upper Midwest Environmental Sciences Center (UMESC) submitted the final environmental assessment (EA) on chloramine-T to CVM.

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- ▶ In May 2007, CVM accepted GFI document #152 on microbial food safety for all finfish from Axcentive SARL.
- ▶ On July 23, 2007, Axcentive SARL submitted to CVM a revised GFI document #159 on the safety of residues in human food for all fish for Halamid[®] (chloramine-T) prepared by the National Aquaculture NADA Coordinator with input from UMESC. The revision was based on the agency's comments.
- ▶ On October 11, 2007, UMESC received word that its final EA on Halamid[®] (chloramine-T) is acceptable to CVM.

CLOVE OIL (MAINLY EUGENOL)—ANESTHETIC

This drug is not currently under development for approval

- ▶ On April 24, 2007, CVM revised GFI #150 dealing with concerns related to the use of clove oil (eugenol) as an anesthetic for fish by correcting information on its ingredients and safety.

COPPER SULFATE (TRIANGLE BRAND COPPER SULFATE[®])—EXTERNAL MICROBICIDE

One initial label claim close to completion: (1) control of mortality due to ichthyophthiriasis on channel catfish.

- ▶ On October 30, 2006, CVM granted MUMS designation to Phelps Dodge Sales Company, the sponsor of Triangle Brand Copper Sulfate[®], for the following label claim for the treatment of *Ichthyophthirius multifiliis* on channel catfish cultured in earthen ponds.
- ▶ In December 2006, the Stuttgart National Aquaculture Research Center submitted the final EA for earthen pond systems to CVM.
- ▶ CVM reviewed the copper sulfate final EA for earthen pond systems and required additional changes.

ERYTHROMYCIN (AQUAMYCIN 100[®])—ORAL ANTIBACTERIAL

One initial label claim close to completion: (1) control of mortality due to bacterial kidney disease in salmonids.

- ▶ On October 2, 2006, the University of Idaho submitted to CVM the on the safety of residues in human food for all freshwater-reared salmonids (GFI #159).
- ▶ On January 4, 2007, CVM granted MUMS designation to Bimeda, the sponsor of AQUAMYCIN 100[®], for the control of mortality in freshwater-reared salmonids due to bacterial kidney disease associated with *Renibacterium salmoninarum*.
- ▶ On January 11, 2007, CVM accepted as complete the GFI document #159 on the safety of residues in human food for all freshwater-reared salmonids from the University of Idaho. A right to reference proprietary toxicological data is needed to complete the Human Food Safety Technical Section.
- ▶ In May 2007, the University of Idaho submitted the final EA to CVM.

FLORFENICOL (AQUAFLO[®])—ORAL ANTIBACTERIAL

Three supplemental label claims close to completion: Control of mortality due to (1) furunculosis in freshwater-reared salmonids, (2) systemic columnaris disease in freshwater-reared salmonids and catfish, and (3) *Streptococcus iniae* in hybrid striped bass and tilapia.

- ▶ On March 19, 2007, CVM approved the Florfenicol (Aquaflo[®]) NADA from Schering-Plough Animal Health for control of mortality in all freshwater-reared salmonids due to coldwater disease.
- ▶ On March 19, 2007, CVM accepted the effectiveness data as being complete from the Aquatic Animal Drug Approval

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Partnership Program (AADAP) for control of mortality due to furunculosis in freshwater-reared salmonids.

- ▶ On April 18, 2007, CVM approved Aquaflor[®] for a conditional approval for control of mortality in channel catfish due to columnaris disease.

FORMALIN—EXTERNAL MICROBICIDE

One supplemental label claim close to completion: (1) control of mortality due to saprolegniasis on all freshwater-reared fish.

- ▶ On July 17, 2007, an Abbreviated NADA (generic copy of Parasite-S[®], sponsored by Western Chemical, Inc.) was granted by CVM for Formacide-B[®] (formalin) for control of certain external parasites on finfish and shrimp and for the control of certain fungi on finfish eggs. Formacide-B[®] is sponsored by B.L. Mitchell, Inc.
- ▶ The CVM Office of Research for the pivotal efficacy studies conducted by for the control of mortality due to saprolegniasis on channel catfish.

HYDROGEN PEROXIDE—EXTERNAL MICROBICIDE

One label claim in progress: (1) control of mortality on all warmwater finfish due to saprolegniasis.

- ▶ On September 6, 2006, CVM accepted the all other information technical section for three broad label claims from Eka Chemicals, Inc. in collaboration with the National Aquaculture NADA Coordinator.
- ▶ On November 9, 2006, CVM accepted the 35% PEROX-AID[®] labeling for three broad label claims from Eka Chemicals, Inc.
- ▶ On November 22, 2006, CVM accepted the Freedom of Information Summary for 35% PEROX-AID[®] for three broad label claims from Eka Chemicals, Inc.

- ▶ On November 30, 2006, Eka Chemicals, Inc. submitted the original NADA package for three broad label claims to CVM for approval.
- ▶ On January 11, 2007, CVM approved the 35% PEROX-AID[®] NADA for the control of mortality due to (1) saprolegniasis on all finfish eggs, (2) bacterial gill disease on all freshwater-reared salmonids, and (3) external columnaris disease on all coolwater fish and channel catfish.
- ▶ On May 2, 2007, CVM removed hydrogen peroxide from the list of Low Regulatory Priority aquaculture drugs because the drug is now the subject of an approved NADA for 35% PEROX-AID[®]. This means that 35% PEROX-AID[®] is the only hydrogen peroxide product that is legal to use.
- ▶ On August 28-29, 2007, the National Aquaculture NADA Coordinator met with Kona Blue Aquatic Farms in Kona, Hawaii to discuss developing data to support a label claim for controlling certain external parasites with 35% PEROX-AID[®] (hydrogen peroxide) on the major fish species reared by Kona Blue, Kona Kampachi[®].

ISOEUGENOL (AQUI-S[®])—ANESTHETIC

One initial label claim in progress: (1) zero withdrawal anesthetic for sedation to handleable condition of all freshwater fish.

- ▶ In February 2004, the National Aquaculture NADA Coordinator obtained \$60,000 in funding through the North Central Regional Aquaculture Center (NCRAC) for the radiolabeled material needed for the total residue depletion study on AQUI-S[®] to be conducted by the Upper Midwest Environmental Sciences Center (UMESC). The funds were provided to the sponsor, AQUI-S New Zealand LTD., so that the purchase of the

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material did not have to go through the bidding process as would have been required for a federal agency. The material was purchased in the fall of 2004 and UMESC started the study in early 2005. UMESC completed the laboratory portion of the total residue depletion study on rainbow trout in the spring 2005.

UMESC submitted the final report to CVM on March 14, 2006. On January 31, 2007, UMESC submitted a response to CVM's August 23, 2006 comments on the total residue depletion studies and a letter requesting the selection of the marker residue. The response was not definitive because of some concern of the radiochemical purity (95%) of the isoeugenol. CVM indicated that the agency cannot determine the significance of using test material with low radiochemical purity until the safe concentration for isoeugenol is calculated. CVM's recommendation is intended to ensure that the reported total radioactivity in tissues is an accurate measurement of total residues. The total residue concentration is then related to the safe concentration determined by the acceptable daily intake (ADI). An ADI daily intake has not been assigned for isoeugenol because the toxicological requirements for isoeugenol have not been completed. This issue will not be resolved until the National Toxicology Program (NTP) has its meeting on isoeugenol toxicology studies in February 2008 and one more toxicology study is completed by the sponsor. If the safe concentration for isoeugenol is much lower than the reported total residues at the time point of concern (in this case 0-h for a zero hour withdrawal anesthetic), the issue of low radiochemical purity may be insignificant. If the safe concentration for isoeugenol is much higher than the reported total residues at the time point of concern, the low radiochemical

purity of the test material may have to be addressed.

- ▶ On September 21, 2006, UMESC submitted a final report to Association of Fish and Wildlife Agencies on the development and validation of a determinative method to detect isoeugenol in fish tissues.
- ▶ On November 28, 2006, CVM accepted as complete from AADAP the effectiveness studies for all freshwater-reared finfish for sedation to handleable stage. Validation of the dose verification method is required before a technical section complete letter can be granted.
- ▶ On December 8, 2006, CVM accepted the target animal safety study protocol on rainbow trout from AADAP.
- ▶ On April 27, 2007, AADAP and UMESC announced they were suspending all research until the completion of the NTP review scheduled for February 2008 on studies conducted on mice and rats. The review had originally been scheduled for May 2007 but due to other priorities was delayed.
- ▶ The Gibbs method used to detect isoeugenol in efficacy and target animal safety studies was submitted by sponsor to CVM.

17 α -METHYLTESTOSTERONE (MT) —GENDER MANIPULATION AID

One initial label claim in progress: (1) masculinization of female early life-stage tilapia.

- ▶ Studies were initiated for effectiveness and target animal safety in late 2006 and early 2007.
- ▶ On July 30, 2007, interested parties met in Bozeman, Montana to discuss environmental assessment issues and to determine a course of action.
- ▶ On October 1, 2007, UMESC submitted to CVM the environmental safety studies and the water method for 17 α -

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methyltestosterone that were conducted and developed by the University of Wisconsin-Madison.

METOMIDATE (AQUACALM®)— SEDATIVE

One label claim in progress (1) sedative during transport of ornamental finfish.

- ▶ On November 13, 2006, CVM granted MUMS designation to Syndel Laboratories, LTD, the sponsor of AQUACALM®, for the following label claim for use as a sedative during transport of ornamental (non-food) finfish.

OXYTETRACYCLINE DIHYDRATE (TERRAMYCIN® 200 FOR FISH)—ORAL ANTIBACTERIAL

Three supplemental label claims close to completion: control of mortality due to (1) systemic columnaris disease in rainbow trout (*Oncorhynchus mykiss*) and (2) systemic coldwater disease in all freshwater-reared salmonids; (3) skeletal marking for salmonids.

- ▶ On August 15, 2006, CVM accepted GFI #159 for penaeid shrimp from the University of Arizona.
- ▶ On September 20, 2006, CVM accepted GFI #159 for the safety of residues in all freshwater-reared finfish in human food from Phibro Animal Health.
- ▶ On October 13, 2006, CVM requested a revision of the EA from UMESC.
- ▶ On March 15, 2007, CVM accepted GFI #152 for the microbial food safety for all freshwater-reared salmonids from AADAP.
- ▶ On April 13, 2007, UMESC submitted the amended EA to CVM.
- ▶ On July 2, 2007, Phibro Animal Health submitted to CVM a request for a Human Food Safety Complete Letter for that Technical Section.

- ▶ On July 23, 2007, Phibro Animal Health submitted to CVM a Labeling Technical Section to add the three new label claims and request the removal of the warning statement concerning use below 9.0°C (48.2°F).

OXYTETRACYCLINE HYDROCHLORIDE (SEVERAL COMMERCIAL PRODUCTS)— MARKING AID

- ▶ On April 20, 2007, CVM approved an abbreviated original (generic) NADA approval for TETROXY Aquatic® sponsored by Cross Vetpharm Group LTD. for use as a skeletal marking aid in finfish fry and fingerlings.

OXYTETRACYCLINE HYDROCHLORIDE (TERRAMYCIN-343®)—EXTERNAL ANTIBACTERIAL

One label claim in progress: control of mortality in coolwater and warmwater finfish due to external columnaris disease)

- ▶ On March 20, 2007, UMESC submitted to CVM efficacy studies on the control of mortality in coolwater and warmwater finfish due to external columnaris disease.
- ▶ On June 7, 2007, CVM granted MUMS designations to Pfizer Animal Health, sponsor of Terramycin-343®, for the following label claims: For the control of mortality in freshwater-reared finfish fry and fingerlings due to (1) external columnaris disease associated with *Flavobacterium columnare*, (2) bacterial gill disease associated with *Flavobacterium branchiophilum*, and (3) systemic columnaris disease associated with *Flavobacterium columnare*.

POTASSIUM PERMANGANATE (CAIROX®)—EXTERNAL MICROBICIDE

One label claim in progress: control of mortality in channel catfish due to external columnaris disease

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- ▶ On September 12, 2006, CVM granted MUMS designations to Carus Chemical Company, the sponsor of Cairox[®], for the following label claims: For the control of mortality in (1) freshwater-reared finfish due to external columnaris disease associated with *Flavobacterium columnare*, (2) freshwater-reared salmonids due to bacterial gill disease associated with *Flavobacterium branchiophilum*, and (3) freshwater-reared salmonids due to coldwater disease associated with *Flavobacterium psychrophilum*.

SALMON GONADOTROPIN RELEASING HORMONE ANALOG (OVAPLANT[®])—SPAWNING AID

One label claim under investigation: For the induction of spawning in ornamental fish

- ▶ On July 25, 2007, CVM granted MUMS designation to Syndel Laboratories, LTD, the sponsor of Ovaprim[®], for the induction of spawning in ornamental fish.

GENERAL

- ▶ On July 18, 2007, the National Aquaculture NADA Coordinator gave an eight-hour presentation to the Veterinary Drugs Directorate (VDD) at its invitation. VDD is the Canadian equivalent of the U.S. CVM. The VDD was interested in (1) the successful aquaculture drug approval processes in the U.S., (2) our experience with various successful partnerships, and (3) insight into expediting the aquaculture drug approval processes in Canada.
- ▶ The designation provision of the MUMS Animal Health Act of 2004 gives sponsors seven years of marketing exclusivity. So far, the MUMS Office has granted 50 designations, 44 of those are to aquaculture drug sponsors who received extensive help from the

National Coordinator for Aquaculture NADAs. The most recent MUMS designations are three for Pfizer Animal Health's Terramycin 343[®] (oxytetracycline hydrochloride) on June 7, 2007 and one for Aquatic Life Sciences, Inc.'s Ovaplant[®] (salmon gonadotropin releasing hormone analog) on May 25, 2007. There have been three NADA approvals of MUMS designations for Eka Chemicals, Inc.'s 35% PEROX-AID[®] and two NADA approvals and one Conditional Approval of MUMS designations for Schering-Plough Animal Health's Aquaflor[®].

- ▶ On May 4, 2007, CVM clarified the extra-label use of medicated feeds in minor species under the Compliance Policy Guide (#615.115) to include (1) veterinarian involvement, (2) treatment use only, (3) no production use, and (4) no feed reformulation or relabeling.
- ▶ From July to September 2007, the National Aquaculture NADA Coordinator gave presentations on innovations and status of aquaculture drug approvals at the 144th American Veterinary Medical Association Convention (Washington, D.C.), 13th Annual Drug Approval Coordination Workshop (Bozeman, Montana), Disease Management Strategies for the Aquatic Environment: Alternative and Innovations Symposium (San Francisco, California), and the Association of Fish and Wildlife Agencies, Drug Approval Working Group meetings (Louisville, Kentucky).

WORK PLANNED

The Work Plan is to continue meeting Objectives 1-8 and to help aquaculture drug sponsors develop major NADA documents and finalize their NADA submissions for approval.

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IMPACTS

Establishment of the National Aquaculture NADA Coordinator position in May 1995 has resulted in coordination, consolidation, and increased involvement in the INAD/NADA process on 18 of the 19 high priority aquaculture drugs established in 1995 and activities on other new drugs of interest to aquaculture. INAD/NADA sponsors and other entities have initiated new INADs and made progress toward unified efforts on existing and new INADs/NADAs or have renewed their commitment to the INAD/NADA process on their drug products.

This enhanced coordination will help and has helped gain original approvals for new NADAs and extensions and expansions of approved NADAs. These include: (1) Original NADA approvals for human chorionic gonadotropin (Chorulon[®]), florfenicol (Aquaflor[®]), and hydrogen peroxide (35% PEROX-AID[®]); (2) Supplemental NADA approvals for florfenicol (Aquaflor[®]), formalin (Formalin-F[®], Parasite-S[®]), oxytetracycline dihydrate

(Terramycin[®] 200 for Fish), and oxytetracycline hydrochloride (OxyMarine[®], Oxytetracycline HCL Soluble Powder-343[®], Terramycin-343[®]); (3) Abbreviated NADA approvals for tricaine methanesulfonate (Tricaine-S[®]) and formalin (Formacide-B[®]); and (4) Conditional approval for florfenicol (Aquaflor[®]).

The approval of the candidate drugs will aid the aquaculture industry to reduce mortalities associated with infectious and handling diseases and to increase their efficiency by using spawning aids and gender manipulation aids. The domestic aquaculture industry will be better able to compete with foreign producers because there will be more legal drugs for producers to use.

PUBLICATIONS, MANUSCRIPTS, PAPERS PRESENTED, AND REPORTS

See the Appendix for a cumulative output for all NCRAC-funded National Aquaculture INAD/NADA Coordinator activities.

SUPPORT

YEAR	NCRAC- USDA FUNDING	OTHER SUPPORT					TOTAL SUPPORT
		UNIVER- SITY	INDUSTRY	OTHER FEDERAL	OTHER	TOTAL	
2004-05	\$9,000		\$22,476	\$46,295	\$26,000	\$94,771	\$103,771
2005-06	\$15,000		\$17,500	\$58,527	\$21,500	\$97,527	\$112,527
2006-07	\$20,000		\$26,980	\$52,855	\$22,200	\$102,035	\$122,035
2007-08	\$20,000		\$32,980	\$57,400	\$22,200	\$112,580	\$132,580
TOTAL	\$64,000		\$99,936	\$215,077	\$92,900	\$407,913	\$471,913

APPENDIX

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Publications in Print

- Griffin, B.R., R.A. Schnick, and W.H. Gingerich. 2000. Update on the Federal-State Aquaculture Drug Approval Project. *Aquaculture Magazine* 26(3):56-58.
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- Schnick, R.A. 1996. Chemicals and drugs. Pages 347-354 in R.C. Summerfelt, editor. *Walleye culture manual*. NCRAC Culture Series #101, North Central Regional Aquaculture Center Publications Office, Iowa State University, Ames.
- Schnick, R.A. 1996. Cooperative fish therapeutic funding initiative: States in partnership with federal agencies to ensure the future of public fish culture. *Transactions of the 61st North American Wildlife and Natural Resources Conference* 61:6-10.
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- Schnick, R.A., D.J. Alderman, R. Armstrong, R. Le Gouvello, S. Ishihara, E.D. Lacierda, S. Percival, and M. Roth. 1997. Worldwide aquaculture drugs and vaccine registration progress. *Bulletin of the European Association of Fish Pathologists* 17(6):251-260.
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- Schnick, R.A. 2006. Zero withdrawal anesthetic for all fish and shellfish: need and candidates. *Fisheries* 31(3):122-126.
- Schnick, R.A. 2007. Fisheries news: major aquaculture drug approval for 35% PEROX-AID[®]. *Fisheries* 32 (2):58.
- Schnick, R.A. 2007. News: fisheries: major aquaculture drug approval (Aquaflor[®]). *Fisheries* 32 (4):162, 190.

Papers Presented

- Gingerich, W.H. and R.A. Schnick. 1997. Federal-state aquaculture drug approval partnership program. 28th Annual Meeting of the World Aquaculture Society, Seattle, Washington, February 19-23, 1997.
- Gingerich, W.H. and R.A. Schnick. 1997. Aquaculture drug registration study progress report. Meeting of the International Association of Fish and Wildlife Agencies, Inland Fisheries Committee, Washington, D.C. March 16, 1997.
- Laurenson, J.P., B.L. Baxter, R.M. Kauffman, J.C. Cleland, and R.A. Schnick. 2005. Development and use of the Aquaculture Risk Information System (AQRIS) and Risk Ranking Tool (AQRRT) for prioritizing import sampling and other activities (poster). 2005 FDA Science Forum, Washington, D.C., April 27-29, 2005.

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- Ringer, R.K. 1993. Workshop on INADs, NADAs, and the IR-4 Project. California Aquaculture Association, Oakland, October 11, 1993.
- Ringer, R.K. 1993. INAD workshop: proper drug and chemical use in aquaculture. 9th Annual Florida Aquaculture Association Conference, Fort Pierce, November 6, 1993.
- Ringer, R.K. 1994. National INAD Coordinator's role in aquaculture. 25th Annual Meeting of the World Aquaculture Society, New Orleans, January 12-18, 1994.
- Ringer, R.K. 1994. State of current USDA regulations on drug, therapeutic, and chemical use. North Carolina Aquaculture Development Conference, New Bern, February 5, 1994.
- Ringer, R.K. 1994. Investigational New Animal Drugs Workshop. Tropical and Subtropical Regional Aquaculture Center Industry Advisory Council Meeting, Honolulu, Hawaii, March 14, 1994.
- Schnick, R.A. 1995. Idaho Aquaculture Association Annual Meeting, Twin Falls, Idaho, May 19-22, 1995.
- Schnick, R.A. 1995. Chemistry in Aquaculture Symposium. Convener and presenter, Cullowhee, North Carolina, May 31-June 2, 1995.
- Schnick, R.A. 1995. FWS/INAD Coordination Workshop. Presenter and coordinator, Bozeman, Montana, August 1-4, 1995.
- Schnick, R.A. 1995. Funding crisis for drugs/therapeutants and coordination of aquaculture INADs/NADAs. Annual meeting of the U.S. Trout Farmers Association, Twin Falls, Idaho, September 27-30, 1995.
- Schnick, R.A. 1995. Activities of the National Coordinator for Aquaculture New Animal Drug Applications. Annual meeting of the National Research Support Program Number 7 (NRSP-7), Rockville, Maryland, October 2, 1995.
- Schnick, R.A. 1995. INAD/NADA Coordinators workshop under the sponsorship of CVM. Organizer and presenter, Rockville, Maryland, November 1-2, 1995.
- Schnick, R.A. 1996. Status of aquaculture INADs and NADAs. Presenter and coordinator, Midcontinent Warmwater Fish Culture Workshop and INAD/NADA Coordination Meetings, Council Bluffs, Iowa, February 6-8, 1996.
- Schnick, R.A. 1996. INAD/NADA update. Western Regional Aquaculture Expo '96, Sacramento, California, February 7-9, 1996.
- Schnick, R.A. 1996. National Aquaculture NADA Coordinator update. Working Group on Quality Assurance in Aquaculture Production, Arlington, Texas, February 14, 1996.
- Schnick, R.A. 1996. Proper use of fish therapeutants based on legal requirements-gill lice, bacterial gill disease, furunculosis, etc. Annual Meeting of the Michigan Aquaculture Association, East Lansing, Michigan, February 23, 1996.
- Schnick, R.A. 1996. Status of aquaculture drug development. Great Lakes Fish Disease Workshop, La Crosse, Wisconsin, February 28, 1996.
- Schnick, R.A. 1996. Advances in therapeutants. Southeastern Fish Diagnosticians' Workshop, Mississippi State, Mississippi, March 13-14, 1996.
- Schnick, R.A. 1996. Report on progress and research study objectives of the Federal-State Drug Registration Partnership. Meeting of the International Association of Fish and Wildlife Agencies, *ad hoc* Committee on Aquaculture, Tulsa, Oklahoma, March 24, 1996.
- Schnick, R.A. 1996. Cooperative fish therapeutic funding initiative—States in partnership with Federal agencies to ensure the future of public fish culture. 61st North American Conference on Wildlife and Natural Resources, Tulsa, Oklahoma, March 24-28, 1996.
- Schnick, R.A. 1996. International regulatory aspects of chemical and drug residues. International Conference on Fish Inspection and Quality, Arlington, Virginia, May 19-24, 1996.

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- Schnick, R.A. 1996. Summary of activities of the National Coordinator for Aquaculture New Animal Drug Applications (NADAs): (May 15, 1995 to May 14, 1996). Meeting of the Aquatic Remedies Steering Committee, American Pet Products Manufacturers Association, Minneapolis, Minnesota, June 18-19, 1996.
- Schnick, R.A. 1996. Overview of NADA Coordinator activities, International Project update, short-term INAD/NADA needs. FWS INAD Coordination Workshop, Bozeman, Montana, August 14-15, 1996.
- Schnick, R.A. 1996. The procedures and responsibilities related to the amoxicillin INAD. Meeting of the Fish Growers of America, Memphis, Tennessee, October 2, 1996.
- Schnick, R.A. 1996. Overview of pivotal study protocol requirements. Chloramine-T Pivotal Efficacy Protocol Development Workshop, Kansas City, Missouri, November 7-8, 1996.
- Schnick, R.A. 1997. INAD and drug clearance update. Midcontinent Warmwater Fish Culture Workshop, Springfield, Missouri, February 3-5, 1997.
- Schnick, R.A. 1997. Overview of partnerships for aquaculture drug approvals. Partnerships for Aquaculture Drug Approvals: Models for Success. Chair of Special Session at 28th Annual Meeting of the World Aquaculture Society, Seattle, Washington, February 19-23, 1997.
- Schnick, R.A. 1997. Current status and future needs for drugs in aquaculture: regional needs. Workshop on International Harmonization for Drugs and Biologics, Seattle, Washington, February 24, 1997.
- Schnick, R.A. 1997. Aquaculture drug approval progress for the catfish industry. Catfish Farmers of America 1997 National Convention, Nashville, Tennessee, February 27-March 1, 1997.
- Schnick, R.A. 1997. Aquaculture drugs and chemicals approvals. Wisconsin Aquaculture Conference '97, Stevens Point, Wisconsin, March 14-15, 1997.
- Schnick, R.A. 1997. History of the IAFWA drug approval project; review of FDA's decisions on drug use in aquaculture; and negotiations by NADA coordinator. First Meeting of the IAFWA Drug Approval Oversight Subcommittee, Hot Springs, Arkansas, May 5, 1997.
- Schnick, R.A. 1997. Review of the November 1996 chloramine-T data requirements; Data call-in. Chloramine-T INAD Coordination Workshop, Bozeman, Montana, August 5, 1997.
- Schnick, R.A. 1997. Overview of NADA Coordinator activities. FWS-INAD Coordination Workshop, Bozeman, Montana, August 7, 1997.
- Schnick, R.A. 1997. NADA Coordinator update. JSA Working Group on Quality Assurance in Aquaculture Production, Washington, D.C., August 21-22, 1997.
- Schnick, R.A. 1997. Worldwide aquaculture drug approvals through partnerships in the United States. Seminar to Schering-Plough Animal Health, Union, New Jersey, August 26, 1997.
- Schnick, R.A. 1997. Progress with registration of drugs and vaccines for aquaculture: introduction and the United States. Chair and presenter at Workshop on "Models of Partnership for Registration of Drugs and Vaccines" and "Round Table on Progress with Registration of Drugs and Vaccines for Aquaculture," EAFP Eighth International Conference on Diseases of Fish and Shellfish, Edinburgh, Scotland, September 14-19, 1997.
- Schnick, R.A. 1997. Role of the national NADA office in aquaculture drug approval activities. Aquaculture Drugs and Chemicals Approval Update, Arlington, Virginia, September 30, 1997.
- Schnick, R.A. 1997. Partial support for National Coordinator for Aquaculture New Animal Drug Applications. WRAC IAC/TC Meeting, Reno, Nevada, October 20-21, 1997.
- Schnick, R.A. 1998. Priorities subcommittee report. Workshop on International Harmonization of Aquaculture Drugs and Biologics, Las Vegas, Nevada, February 15, 1998.

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- Schnick, R.A. 1998. Progress on 5-year plan items (Plan items 1, 2, 12, and 13). Working Group on Quality Assurance in Aquaculture Production, 29th Annual Meeting of the World Aquaculture Society, Las Vegas, Nevada, February 15-19, 1998.
- Schnick, R.A. 1998. Introduction and discussion of INADs and extra-label use. Special Session, "Aquaculture drug approvals through producer INADs?," 29th Annual Meeting of the World Aquaculture Society, Las Vegas, Nevada, February 15-19, 1998.
- Schnick, R.A. 1998. INADs and other drug business. PNFHPC meeting, 29th Annual Meeting of the World Aquaculture Society, Las Vegas, Nevada, February 15-19, 1998.
- Schnick, R.A. 1998. Aquaculture drug approval update. Meeting of the Aquaculture & Seafood Advisory Committee, American Veterinary Medical Association, 29th Annual Meeting of the World Aquaculture Society, Las Vegas, Nevada, February 15-19, 1998.
- Schnick, R.A. 1998. Progress on aquaculture drug approvals. Fisheries Management and Habitat Protection Statewide Training Conference, Green Bay, Wisconsin, March 10-12, 1998.
- Schnick, R.A. 1998. IAFWA Project status and progress. Meeting of the Inland Fisheries Committee, North American Natural Resources Conference, Orlando, Florida, March 20-24, 1998.
- Schnick, R.A. 1998. Use of chemicals in fish management and fish culture: past and future. Symposium, "Xenobiotic metabolism in fish," American Chemical Society, Dallas, Texas, March 29-April 2, 1998.
- Schnick, R.A. 1998. Drug approval partnership. American Fisheries Society, Fisheries Administrator's Section, Phoenix, Arizona, April 17-19, 1998.
- Schnick, R.A. 1998. Overview of NADA Coordinator activities. FWS-INAD Coordination Workshop, Bozeman, Montana, August 4-5, 1998.
- Schnick, R.A. 1998. NADA Coordinator update. Meeting of the JSA Working Group on Quality Assurance in Aquaculture Production, Washington, D.C., September 4, 1998.
- Schnick, R.A. 1998. Overview of the activities of the National Coordinator for Aquaculture New Animal Drug Applications and suggestions for enhancing dialogue with the Minor Use Animal Drug Program. Meeting of the Minor Use Animal Drug Program Technical Committee for NRSP-7, Rockville, Maryland, September 22, 1998.
- Schnick, R.A. 1998. The effect of the Animal Drug Availability Act of 1996 and the FDA Modernization Act of 1997 on approvals of animal health products for minor species/minor uses. 1998 Animal Health Institute Joint Meeting, San Diego, California, November 9, 1998.
- Schnick, R.A. 1998. Overview of IAFWA Project Status. Coordination meeting for IAFWA Aquaculture Drug Approval Project, La Crosse, Wisconsin, November 19-20, 1998.
- Schnick, R.A. 1998. Overview of the international aspects of antimicrobial sensitivity determination and the need for harmonization in aquaculture drugs. Workshop on MIC Methodology (EU Concerted Action - Fair-CT97-3760), Weymouth, England, November 24-27, 1998.
- Schnick, R.A. 1999. National NADA Office aquaculture drug approval activities. Aquaculture Drugs and Chemicals Approval Update—1999, Arlington, Virginia, January 11, 1999.
- Schnick, R.A. 1999. Introduction and discussion of INADs and new NADAs. "Aquaculture drug approvals through producer INADs," Aquaculture America '99, Tampa, Florida, January 27-30, 1999.
- Schnick, R.A. 1999. Update on activities of the National Coordinator for Aquaculture New Animal Drug Applications. Meeting of the Joint Subcommittee on Aquaculture, Working Group on Quality Assurance in Aquaculture Production,

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- Aquaculture America '99, Tampa, Florida, January 27-30, 1999.
- Schnick, R.A. 1999. Update on the IAFWA drug approval process. 1999 Mid-Continent Fish Culture Workshop, North Kansas City, Missouri, February 2-3, 1999.
- Schnick, R.A. 1999. Aquaculture drug approval progress for the catfish industry. Annual Meeting of the Catfish Farmers of America, New Orleans, Louisiana, February 18-20, 1999.
- Schnick, R.A. 1999. Advances in fishery chemicals. 1999 Colorado/Wyoming AFS Meeting, "Reeling in the next millennium," Cheyenne, Wyoming, March 1-3, 1999.
- Schnick, R.A. 1999. Overview of florfenicol approval process. Coordination meeting for florfenicol efficacy studies, La Crosse, Wisconsin, March 17-18, 1999.
- Schnick, R.A. 1999. Progress and issues related to the federal-state aquaculture drug approval partnership. Meeting of the IAFWA Drug Approval Oversight Subcommittee, San Francisco, California, March 25-28, 1999.
- Schnick, R.A. 1999. International cooperation toward aquaculture drug approvals. 30th Annual Meeting of the World Aquaculture Society, Sydney, Australia, April 26-May 2, 1999. (Keynote address)
- Schnick, R.A. 1999. USA programs related to aquaculture drug approval development and issues. Australian Department of Agriculture, Fisheries and Forestry, Canberra, Australia, May 3, 1999.
- Schnick, R.A. 1999. Overview of NADA Coordinator activities. USFWS - INAD Coordination Workshop, Bozeman, Montana, August 4-5, 1999.
- Schnick, R.A. 1999. Aquaculture NADA Coordinator update. Meeting of the JSA Working Group on Quality Assurance in Aquaculture Production, Washington, D.C., September 9, 1999.
- Schnick, R.A. 1999. International harmonisation of antibacterial agent approvals and susceptibility testing. Chaired Workshop at European Association of Fish Pathologists 9th International Conference, "Diseases of Fish and Shellfish," Rhodes, Greece, September 19-24, 1999.
- Schnick, R.A. 2000. National Coordinator for Aquaculture New Animal Drug Applications update. Working Group on Quality Assurance in Aquaculture Production at Aquaculture America 2000, New Orleans, Louisiana, February 2, 2000.
- Schnick, R.A. 2000. Introduction and background to the MUMS legislation. Special Session "Future drug approval process: MUMS opportunities," Aquaculture America 2000, New Orleans, Louisiana, February 2-5, 2000.
- Schnick, R.A. 2000. You can make a difference. Special Session "Future drug approval process: MUMS opportunities." Aquaculture America 2000, New Orleans, Louisiana, February 2-5, 2000.
- Schnick, R.A. 2000. Drug approvals. Mid-Continent Warmwater Fish Culture Workshop, Council Bluffs, Iowa, February 7-8, 2000.
- Schnick, R.A. 2000. New drug approval progress. Missouri Aquaculture Association Annual Meeting, Cape Girardeau, Missouri, February 22-23, 2000.
- Schnick, R.A. 2000. Update on the Federal-State Aquaculture Drug Approval Project. International Association for Fish and Wildlife Agencies, Drug Approval Working Group Meeting, Chicago, Illinois, March 26, 2000.
- Schnick, R.A. 2004. Brief overview—Recent developments and highlights on drug approval progress. Drug Approval Working Group Meeting, Atlantic City, New Jersey, September 27, 2004.
- Schnick, R.A. 2004. Review and Policy Guidance #5—Strategic plan for end point to IAFWA Project. Drug Approval Working Group Meeting, Atlantic City, New Jersey, September 27, 2004.
- Schnick, R.A. 2004. IAFWA Project Work Plan—National Coordinator for Aquaculture New Animal Drug Applications. Post-Drug Approval Working Group Meeting, Atlantic City, New Jersey, September 27, 2004.

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- Schnick, R.A. 2004. Aquaculture outside of NRSP-7. NRSP-7 Fall 2004 Meeting, Rockville, Maryland, October 6, 2004.
- Schnick, R.A. 2004. Drug issue and needs for Southern U.S. Marine Aquaculture. Workshop on Marine Aquaculture Drug and Chemotherapeutant Issues and Needs on Southern United States, Sarasota, Florida, November 16, 2004. PowerPoint presentation distributed to interested entities and placed on the National Aquaculture NADA Coordinator Web site.
- Schnick, R.A. 2005. An update on the approval of therapeutants for use in aquaculture. Coolwater Fish Culture Workshop, Cherry Valley Lodge, Ohio, January 9-11, 2005.
- Schnick, R.A. 2005. Need for a zero withdrawal anesthetic for coolwater fish culture. Coolwater Fish Culture Workshop, Cherry Valley Lodge, Ohio, January 9-11, 2005.
- Schnick, R.A. 2005. Drug Matrix Database. JSA Working Group on Quality Assurance in Aquaculture Production, Aquaculture America 2005, New Orleans, Louisiana, January 17, 2005.
- Schnick, R.A. 2005. INAD/NADA Overview—17 α -methyltestosterone. 17-MT Mini-Session, Aquaculture America 2005, New Orleans, Louisiana, January 18, 2005.
- Schnick, R.A. 2005. Responsible use of therapeutants drugs in aquaculture. Environmental and Ethical Issues in Aquaculture, Aquaculture America 2005, New Orleans, Louisiana, January 19, 2005.
- Schnick, R.A. 2005. Update on product approvals for fish health. Striped Bass Industry Forum, Aquaculture America 2005, New Orleans, Louisiana, January 19, 2005.
- Schnick, R.A. 2005. Highlights and progress toward aquaculture drug approvals. Producer Session "Successes in Drug Approvals," Aquaculture America 2005, New Orleans, Louisiana, January 20, 2005.
- Schnick, R.A. 2005. Highlights on IAFWA Project drug approval progress. Drug Approval Working Group Meeting, Arlington, Virginia, March 16, 2005.
- Schnick, R.A. 2005. Questions in Strategic Plan for End Point to the IAFWA Project. Drug Approval Working Group Meeting, Arlington, Virginia, March 16, 2005.
- Schnick, R.A. 2005. IAFWA Project Work Plan—National Coordinator for Aquaculture New Animal Drug Applications. Drug Approval Working Group Meeting, Arlington, Virginia, March 16, 2005.
- Schnick, R.A. 2005. Aquaculture drug approval progress. NRSP-7 Meeting, Rockville, Maryland, May 19, 2005.
- Schnick, R.A. 2005. Upcoming aquaculture drug approvals. American Fisheries Society Fish Health Section Meeting, Bloomington, Minnesota, July 27-29, 2005.
- Schnick, R.A. 2005. Matrices for tracking major aquaculture drug approval development. 11th Annual Drug Approval Coordination Workshop, Bozeman, Montana, August 2-3, 2005.
- Schnick, R.A. 2005. Brief overview—recent developments and highlights on drug approval progress. Drug Approval Working Group Meeting, Nashville, Tennessee, September 15, 2005.
- Schnick, R.A. 2005. Overview of the status of (1) Expansion and extension of the oxytetracycline (OTC) label claims, (2) Initial label claims for chloramine-T, (3) Microbial Food Safety submissions on these and other aquaculture drugs, and (4) Information on public and private aquaculture production statistics. Meeting on Microbial Food Safety Data Requirements for Oral Oxytetracycline and Chloramine-T for Approval in U.S. Commercial and Public Freshwater Aquaculture, Rockville, Maryland, October 5, 2005.
- Schnick, R.A. 2006. Internet-based drug matrix database and application. Working Group on Quality Assurance in Aquaculture Production meeting at Aquaculture America 2006, Las Vegas, Nevada, February 13, 2006.
- Schnick, R.A. 2006. 2005 Survey to determine unmet label claims for the IAFWA Project drugs. Working Group on Quality Assurance in Aquaculture Production meeting at Aquaculture America 2006, Las Vegas, Nevada, February 13, 2006.

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- Schnick, R.A. 2006. Drug approvals for salmonids: success soon. US Trout Farmers Association Industry Update at Aquaculture America 2006, Las Vegas, Nevada, February 14, 2006.
- Schnick, R.A. 2006. 17alpha-methyltestosterone activities timeline. 17alpha-methyltestosterone: Approval status and activities overview at Aquaculture America 2006, Las Vegas, Nevada, February 14, 2006.
- Schnick, R.A. 2006. Update on product approvals for fish health. Striped Bass Growers Association Industry Update at Aquaculture America 2006, Las Vegas, Nevada, February 15, 2006.
- Schnick, R.A. 2006. Partnerships toward the approval of 17-MT. American Tilapia Association Industry Update at Aquaculture America 2006, Las Vegas, Nevada, February 15, 2006.
- Schnick, R.A. 2006. Recent aquaculture drug approval successes. Producer Session "Aquaculture Drug Approval Successes" at Aquaculture America 2006, Las Vegas, Nevada, February 16, 2006.
- Schnick, R.A. 2006. Special funding for aquaculture drug approvals. Producer Session "Aquaculture Drug Approval Successes" at Aquaculture America 2006, Las Vegas, Nevada, February 16, 2006.
- Schnick, R.A. 2006. Update and status of IAFWA Project drugs. Drug Approval Working Group, Columbus, Ohio, March 21, 2006.
- Schnick, R.A. 2006. Brief highlights of the last six months for IAFWA Project drugs. Drug Approval Working Group, Columbus, Ohio, March 21, 2006.
- Schnick, R.A. 2006. Drug approval status: Then and now. 31st Eastern Fish Health Workshop, Charleston, South Carolina, March 27-31, 2006.
- Schnick, R.A. 2006. Drug approval status: Why we are where we are and not where you thought we should be. 31st Eastern Fish Health Workshop, Charleston, South Carolina, March 27-31, 2006.
- Schnick, R.A. 2006. Presentation to NRSP-7. NRSP-7 Spring Meeting 2006, Rockville, Maryland, May 11, 2006.
- Schnick, R.A. 2006. Private aquaculture sector survey needed to complete the exciting progress toward drug approvals. National Association of State Aquaculture Coordinators, Little Rock, Arkansas, May 23-26, 2006.
- Schnick, R.A. 2006. History of efforts toward aquaculture drug approvals. Center for Veterinary Medicine, Rockville, Maryland, June 5, 2006.
- Schnick, R.A. 2006. Overview of Public Aquaculture Sector Survey to determine unmet label claims for IAWFA Project drugs. 12th Annual Aquaculture Drug Approval Coordination Workshop, La Crosse, Wisconsin, August 1-2, 2006.
- Schnick, R.A. 2006. Introduction to non-IAFWA projects for aquaculture drug approvals. 12th Annual Aquaculture Drug Approval Coordination Workshop, La Crosse, Wisconsin, August 1-2, 2006.
- Schnick, R.A. 2006. Aquaculture NADA Coordinator's perspective on non-IAFWA Project drugs. 12th Annual Aquaculture Drug Approval Coordination Workshop, La Crosse, Wisconsin, August 1-2, 2006.
- Schnick, R.A. 2006. Update on AFWA Project Drugs. AFWA Drug Approval Working Group, Aspen, Colorado, September 18, 2006.
- Schnick, R.A. 2006. Advances toward drug approvals for farmed fish. Penn Aqua 2006, Harrisburg, Pennsylvania, September 20-23, 2006.
- Schnick, R.A. 2006. Advances in aquaculture drug approvals. NRSP-7, La Crosse, Wisconsin, October 10, 2006.
- Schnick, R.A. 2006. Actual and anticipated NADA approvals for 2006-2009. JSA Working Group on Aquaculture Drugs, Biologics, and Pesticides Meeting, Washington, D.C., October 25, 2006.
- Schnick, R.A. 2006. Microbial Food Safety submissions & acceptances. JSA Working Group on Aquaculture Drugs, Biologics, and Pesticides Meeting, Washington, D.C., October 25, 2006.
- Schnick, R.A. 2006. Effect of MUMS designations on sponsor participation. JSA Working Group on Aquaculture Drugs, Biologics, and Pesticides Meeting, Washington, D.C., October 25, 2006.

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- Schnick, R.A. 2006. Proposed actions to meet unmet label claims from the Public Aquaculture Sector Survey. JSA Working Group on Aquaculture Drugs, Biologics, and Pesticides Meeting, Washington, D.C., October 25, 2006.
- Schnick, R.A. 2007. Update on aquaculture drug approvals. North Central Regional Aquaculture Center Annual Meeting, Columbus, Ohio, February 9-11, 2007.
- Schnick, R.A. 2007. Update on new drug approvals for catfish. Catfish Farmers of America Annual Meeting, Orange Beach, Alabama, February 15-18, 2007.
- Schnick, R.A. 2007. Recent aquaculture drug approval successes. Aquaculture 2007, Producer Session "Aquaculture drug approval successes," San Antonio, Texas, February 28, 2007.
- Schnick, R.A. 2007. Progress on drug approvals. Aquaculture 2007, Striped Bass Growers Association Annual Meeting, San Antonio, Texas, February 28, 2007.
- Schnick, R.A. 2007. Progress on drug approvals for salmonids. Aquaculture 2007, US Trout Farmers Association Forum, San Antonio, Texas, February 27, 2007.
- Schnick, R.A. 2007. Progress on drug approvals for tilapia. Aquaculture 2007, American Tilapia Association Session, San Antonio, Texas, March 1, 2007.
- Schnick, R.A. 2007. Status of aquaculture drug approvals. NRSP-7 Spring Meeting, Rockville, Maryland, March 5-7, 2007.
- Schnick, R.A. 2007. AFWA Project Drugs: Remaining requirements and progress September 2006 to March 2007, Drug Approval Working Group Meeting, Portland, Oregon, March 22, 2007.
- Schnick, R.A. 2007. Thoughts on Administrative NADA process, Drug Approval Working Group Meeting, Portland, Oregon, March 22, 2007.
- Schnick, R.A. 2007. How Extension Specialists can help in the aquaculture drug approval process. 4th National Aquaculture Extension Conference, Cincinnati, Ohio, April 30 to May 4, 2007.
- Schnick, R.A. 2007. Dialog with Upper Midwest Environmental Sciences Center on Fisheries Management Chemicals and Drugs Program. Upper Midwest Environmental Sciences Center Partner Meetings, La Crosse, Wisconsin, May 10-11, 2007.
- Schnick, R.A. 2007. Progress towards aquaculture drug approvals. 144th AVMA Annual Convention, Washington, D.C., July 14-18, 2007.
- Schnick, R.A. 2007. Possibilities for expediting Canadian aquaculture drug approval processes. Veterinary Drugs Directorate, Ottawa, Ontario, Canada, July 18, 2007.
- Schnick, R.A. 2007. Historical background to this fabulous partnership. 13th Annual Drug Approval Coordination Workshop, Bozeman, Montana, July 31-August 1, 2007.
- Schnick, R.A. 2007. The future of this fabulous partnership. 13th Annual Drug Approval Coordination Workshop, Bozeman, Montana, July 31-August 1, 2007.
- Schnick, R.A. 2007. The AFWA Project: NADA approvals, label claims under development for initial and/or expanded NADA approvals, and status of technical section completions. 13th Annual Drug Approval Coordination Workshop, Bozeman, Montana, July 31-August 1, 2007.
- Schwaab, E., and R.A. Schnick. 2005. Summary of IAFWA Project: History and partnerships. 11th Annual Drug Approval Coordination Workshop, Bozeman, Montana, August 2-3, 2005.
- Schwaab, E., and R.A. Schnick. 2006. Summary of IAFWA Project: History and partnerships. 12th Annual Aquaculture Drug Approval Coordination Workshop, La Crosse, Wisconsin, August 1-2, 2006.