



PERDC

**PROCESS ENGINEERING RESEARCH
& DEVELOPMENT CENTER**
TEXAS A&M ENGINEERING EXPERIMENT STATION

Formerly "Food Protein Research & Development Center"

26th Annual Practical Short Course

Organized by the

Extrusion Technologies Program
Process Engineering Research and Development Center
The Texas A&M Engineering Experiment Station
College Station, Texas 77843-2476 U.S.A.

In cooperation with

Department of Wildlife and Fisheries Sciences
Texas A&M AgriLife Research
College Station, Texas 77843-2258 U.S.A.

Aquaculture Feed Extrusion, Nutrition, & Feed Management August 25-30, 2019

SCHEDULE

Sunday, August 25, 2019

- 6:00 PM Registration, hotel
- 6:30 PM Welcome, Introduction, & Announcements - Mian N. Riaz
- 7:00 PM Dinner, hotel (optional)

Monday, August 26, 2019

- 7:40 AM Bus leaves hotel to Rudder Tower, Texas A&M University
- 8:00 AM "Introduction and Principles of Extrusion" - Mian N. Riaz
- 9:15 AM "The Global Aquatic Market and the Various Species of Fish, Shrimp, etc. and Where They are Produced in the World" - Delbert Gatlin
- 9:45 AM Break
- 10:00 AM "Principles of Dry Extrusion and Its Application in Aquatic Feed and Pet Food" - Dave Albin
- 10:45 AM "Plant Dust Collection and Weighing / Feeding" - Mark Zschoche
- 11:30 AM **Group Photo** and Lunch
- 12:45 PM "Dry Extrusion of Full Fat Soy and Partially Defatted Soybean Meal" - Dave Albin
- 1:30 PM "Protein Concentrate for Aqua Feed and Biologically Active Substances" - Natalia Khabibulina
- 2:00 PM Break
- 2:15 PM "Bulk Material Handling in Extrusion Processes" - Mark Zschoche
- 3:15 PM "Other Commercial Applications of Dry Extrusion" - Dave Albin
- 4:00 PM Bus leaves for PERDC for Multiple Demonstrations:
 - **Full Fat Soy Using Whole Soybeans with a Dry Extruder**
 - **Full Fat Soy Using Dehulled Soybeans with a Dry Extruder**
 - **Fisheries By-Products Recycling with a Dry Extruder**

Tuesday, August 27, 2019

- 7:40 AM Bus leaves hotel for Rudder Tower, Texas A&M University
- 8:00 AM "Principles of Aquaculture Nutrition: Part 1" - Delbert Gatlin
- 9:15 AM "Optimizing Aqua Feed Quality: Oxidation Control, Microbial Growth Control, and Palatability" - Nicola Tallarico
- 10:30 AM Break
- 10:45 AM "Continuous Spray and Coating Systems" - Dave Mattice
- 11:30 AM Lunch
- 12:45 PM "Solutions to Common Grinding Problems" - Joseph S. Anderson
- 1:30 PM "Commercial Vitamin Product Forms, Vitamin Premixes, and Their Performance in Aquatic Feed" - Jon Bergstrom
- 2:30 PM Break
- 2:45 PM "Ultra Fine Grinding for Aquatic Feed" - Phil Erickson
- 3:15 PM "Characteristics and Applications of Interrupted Flight Expanders" & "Processing of Full Fat Soy Products, Pet Foods, and Aquaculture Feeds" - Enrique Diaz
- 4:00 PM Bus leaves for PERDC for Multiple Demonstrations:
 - **Full Fat Soy Using Interrupted Flight Expander**
 - **Aquatic Feed Using Interrupted Flight Expander**
 - **Surface Coating Systems for Aquatic Feed**
 - **Pulverizing of Ingredients**

Wednesday, August 28, 2019

- 7:40 AM Bus leaves hotel for Rudder Tower, Texas A&M University
- 8:00 AM "Ingredients and Recipe Considerations" - Galen Rokey
- 9:15 AM "Single and Twin Screw Extruders and Their Applications in Aquatic Feed" - Charles Engrem
- 10:30 AM Break
- 10:45 AM "High Fat Extrusion and Product Densification" - Galen Rokey
- 11:30 AM Lunch
- 12:45 PM "Preconditioning Technology" - Charles Engrem
- 1:30 PM "Product Analysis & Laboratory Techniques" - Galen Rokey
- 2:45 PM Break
- 3:00 PM "NIR Analyzer on Ingredients and Aqua Feed" - TBA
- 3:30 PM "Drying and Cooling Systems for Aquaculture Feed" - Tom Barber
- 4:30 PM Bus leaves for PERDC for Multiple Demonstrations:
 - **Salmon Feed for Vacuum Infusion Using a Single Screw Extruder**
 - **Ultra-Fine Fish Feed Using Twin Screw Extruder**
 - **NIR Analyzer on Ingredients and Aqua Feed**

Thursday, August 29, 2019

- 7:40 AM Bus leaves hotel for Rudder Tower, Texas A&M University
- 8:00 AM "Automated Control of Extrusion Systems" - Andrew McClaskey
- 9:00 AM "Principles of Aquaculture Nutrition: Part 2" - Delbert Gatlin
- 10:00 AM Break
- 10:15 AM "Extrusion Die Technology" - Spencer Lawson
- 11:00 AM "Vacuum Infusion Coating Principles for Aquatic Feed" - Wayne Busilla
- 11:45 AM **Graduation Lunch**
- 1:15 PM "Extrusion Processing Technologies" - Galen Rokey
- 2:15 PM "Micro-Aquatic Feeds" - Spencer Lawson
- 2:45 PM Break
- 3:00 PM "Troubleshooting: Ensuring a Smooth Running Extrusion Operation" - Galen Rokey
- 4:00 PM Bus leaves for PERDC for Multiple Demonstrations:
 - **Floating Catfish Feed Using Single Screw Extruder**
 - **High Fat Yellow Tail Feed Using a Twin Screw Extruder**
 - **Vacuum Infusion for Aquatic Feed**

Friday, August 30, 2019

- 7:40 AM Bus leaves hotel for Rudder Tower, Texas A&M University
- 8:00 AM "Odor Control in an Aqua Feed Plant" - Larry Fex
- 8:45 AM "Shrimp Feed Management and Feed Physical Characteristics" - Addison Lawrence
- 10:15 AM Break
- 10:30 AM "Least Cost Feed Formulation" - Chris Bailey
- 11:30 AM "Wrap-Up" - Mian N. Riaz and Delbert Gatlin
- 11:45 AM Bus leaves for hotel
- 1:30 PM Optional Tour of Texas A&M University's Aquaculture Facilities - Delbert Gatlin (leave from hotel)
- 3:00 PM Bus returns to hotel

You can register online at <https://perdc.tamu.edu/extrusion/>

OBJECTIVES OF SHORT COURSE

- Train production personnel in principles and characteristics of extruders and support systems for effective selection and operation.
- Review current practices for preparation of aquaculture feeds.
- Demonstrate equipment in operation and familiarize attendees with practical aspects of feeds extrusion.
- Review aquaculture nutrition and feed management practices.

ACCOMMODATIONS

Reservations for lodging should be made directly by attendee. A block of rooms has been reserved at the Embassy Suites for short course participants at the special rate of **\$125/night** plus tax for single or double occupancy. This rate includes a free full breakfast as well as free shuttle to and from the College Station airport. Ask for the rate specifically and mention the **Group Code "AQ9."** **Hotel reservations must be received before July 23, 2019** in order to get special rate; the special rate DOES NOT APPLY before August 24 or after August 31. You can make your reservation by telephone, fax, or internet.

Embassy Suites

201 University Drive East
College Station, Texas 77840, USA

Tel: 979.260.6000; Fax: 979.260.6001

<http://www.embassysuitescollegestation.com>

When faxing or emailing hotel reservations, please include a credit card number to confirm your reservation, and also include your departure and arrival dates.

TRANSPORTATION

Easterwood Airport at College Station is easily reached by about eight flights daily. From Dallas/Ft. Worth International Airport connect via American Airlines. From Houston Intercontinental Airport connect via United Airlines. **The airport code for Easterwood Airport is CLL.** To get to the hotel in College Station, participants can call the **Embassy Suites (979.260.6000)** upon arrival at Easterwood Airport for courtesy van service or participants can schedule a pickup with GroundShuttle.com (855.303.4415) from George Bush Intercontinental airport (IAH) or Houston Hobby airport (HOB) or Austin Bergstrom airport (AUS).

REGISTRATION

The registration fee for the short course and pilot plant demonstrations includes daily lunch, refreshments at breaks, local transportation, a short course eBook manual, and certificates of completion.

Registration fee is \$1650 if paid in full by July 23, 2019.

After this date, registration fee is \$1750. Continuing Education Units (CEUs) are available. An **OPTIONAL** black & white paper manual is available for an additional \$200 fee. There is a 10% registration discount if three or more individuals from the same organization register for the short course. Academic discounts may be applicable if space is available. **Registration fees are not refundable**, but substitute personnel may be sent by the same firm. Space is limited; therefore, applications will be accepted on a first-come, first-served basis.

You can register online at

<https://perdc.tamu.edu/extrusion/>

You can pay online by credit card (American Express, Visa, or Master Card). If paying by check, make payable to **TEES (Texas A&M Engineering Experiment Station) and mail to TEES Fiscal Office c/o TEES EDGE Program, 7607 Eastmark Dr. Suite 250D, College Station, TX 77840.**

For registration inquiries, contact:

Cyndi Casanova

Short Course Coordinator

Process Engineering R&D Center

2476 TAMU

College Station, Texas 77843-2476 U.S.A.

Tel: 979.845.2741

Email: shortcourse@tamu.edu

LOCATION AND FACILITIES

All lectures will be held at Rudder Tower, Texas A&M University Campus. College Station temperatures in August are from 73-96°F (23-36°C). Participants will be taken by bus to the Process Engineering R&D Center (Texas A&M RELLIS Campus) for afternoon demonstrations. Manuals and lectures will be in English. Translation equipment is available by prior arrangement for organized groups willing to provide their own translators.

SHORT COURSE CONDUCT

All short course sessions will be informal. Insurance policies do not allow non-university personnel, other than original manufacturers, to operate equipment. Questions are encouraged during the lectures, breaks, and social periods. Laptops are allowed in the classroom to follow the presentations in the short course eBook manual. If you require WiFi access during the conference, please inform the Short Course Coordinator when you register (the hotel has its own WiFi access and is separate from the conference). Rights to cancel this course with refund, to deny service, to substitute speakers, and to change schedules, as necessary to expedite the course, are reserved. Texas A&M University System policy does not allow inclusion of alcoholic beverages in registration fees.

INSTRUCTORS

Dr. Dave Albin, Vice President, Nutrition & Extrusion Technologies, Insta-Pro International

Joseph S. Anderson, Industrial Applications Engineer, CPM Roskamp Champion

Dr. Christopher Bailey, Professor, Poultry Science Department, Texas A&M University

Tom Barber, Vice President - Process Engineering, Buhler Aeroglide

Dr. Jon Bergstrom, Senior Technical Support Manager, Swine, DSM Nutritional Products North America

Wayne Busilla, Purchasing & Logistics Manager, UAS Canada Inc.

Enrique Diaz, Account Manager, Vegetable Oil & Animal Feed Divisions, Anderson International Corporation

Charles Engrem, Director of Aquafeed Process, Wenger Manufacturing Company

Phil Erickson, International Application Engineer, Reynolds Engineering & Equipment, Inc.

Larry Fex, Technical Sales / Plant Commissioning, UAS Canada Inc.

Dr. Delbert Gatlin, Professor, Department of Wildlife and Fisheries Sciences, Texas A&M University

Connor Girlinghouse, Technical Assistant, Extrusion Technology Program, Process Engineering R&D Center, Texas A&M University

Natalia Khabibulina, Senior R&D Specialist, Partner-M

Dr. Addison Lawrence, President, Lawrence Mariculture Consulting, Inc.

Spencer Lawson, UP/C Technology Manager, Wenger Manufacturing Company

Chris Mack, Senior Research Associate, Extrusion Technology Program, Process Engineering R&D Center, Texas A&M University

Dave Mattice, Vice President, Sales Manager, Automated Process Equipment Corp. (APEC)

Andrew McClaskey, Controls Technician, Wenger Manufacturing Company

Stephen D. Prince, Research Associate, Extrusion Technology Program, Process Engineering R&D Center, Texas A&M University

Dr. Mian N. Riaz, Head, Extrusion Technology Program, Process Engineering R&D Center, Texas A&M University

Galen Rokey, Process Technology Director, Companion Animal Division, Wenger Manufacturing Company

Nicola Tallarico, Business Manager Aquaculture - EMENA, Kemira AquaScience

Mark Zschoche, Industry Manager, Sales, Schenck Process LLC

UPCOMING PRACTICAL SHORT COURSES

For details, visit <https://perdc.tamu.edu/short-courses/>

Extruded Pet Foods and Treats, July 8-11, 2019

Feeds & Pet Food Extrusion, February 2-7 2020

For additional technical information, contact:

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