

TO: Bill Franzin, President
FROM: Doug Dixon, President **Bioengineering Section**
DATE: February 12, 2009

I. Motion Report

No Motions requested

II. Activity Report

Current Section Officers and Executive Committee (EXCOM) members through August 2009 include:

Doug Dixon, President
Marcin Whitman, Past-President
Ted Castro-Santos, President-Elect and Telemetry Standard Committee Chair
Michael Love, Secretary-Treasurer
Alex Haro – Newsletter Editor
Lynn Reese – Emerging Technology Ad Hoc Committee Chair

The Section will conduct an election for a new President-elect and Secretary/Treasurer prior to the 2009 AFS Annual Meeting. The new EXCOM will be installed at the annual meeting in Nashville.

EXCOM meetings are held on a monthly basis. Meeting minutes are available and will be posted to our web site when it is refined and updated as discussed herein.

Overall Section membership is almost 250 fisheries professionals and students.

(A) Summary of Outcomes and Accomplishments Organized by Focus Area in Strategic Plan:

Goal MS 2, Science-Based Information

Emerging Technology Committee: Bioengineering established an ad hoc Emerging Technology committee in 2007. This committee's original intent was to provide strategic support and technical guidance for those who are pursuing either the development of new fish passage and intake protection technologies or the use of existing technologies in unusual and innovative conditions (e.g., as fish collection devices or as barriers to fish passage). The current committee is under the chairmanship of Lynn Reese of the U.S. Army Corps of Engineers (USACE) with support from Ned Taft (Alden Research Laboratory), Jock Conyngham (Engineer Research and Development Center, USACE), Doug Dixon (Electric Power Research Institute), Larry Swenson (National Marine Fisheries Service), and Marcin Whitman (California Department of Fish & Game). The Committee has interim bylaws describing its mission, objectives, operating structure, and technology evaluation criteria. Activity in 2008-2009 has been relatively limited (i.e., no requests for technology reviews). Because of the lack of activity as planned, the

Committee is working to re-define its missions to be more aggressive in encouraging and stimulating innovation in fish passage and protection. To accomplish this, the Committee has initiated 3 efforts:

1. Planning to publish in *Fisheries* a two-part article on “Guidelines for Fish Protection Technology Evaluation”. Originally developed in 2001, these guidelines have not been released outside the Section. This action will put the guidelines into the public domain.
2. Organizing a symposium on **Promoting Innovation in Fish Passage & Protection**. This symposium is being organized by the Section’s President-elect, Ted Castro-Santos and has been approved by the Nashville organizing committee. This symposium will serve as a benchmark for establishing the current ‘state of the art’ in fish passage and protection, but more importantly to set the stage for future progress, with each author being tasked to identify areas in need of improvement and identifying research needs and solutions for these problems. Unlike other symposia, where authors present their own findings, this symposium will be a series of review papers with the aim of presenting a holistic perspective of the field. Careful attention will be paid to fundamental physical and biological principles, and the symposium will conclude with a series of talks focusing on basic research and what the fields of biomechanics, physiology, and behavior can offer to the bioengineering community. In support of this last goal, The Leverhulme Network (an international fellowship of scientists studying fish responses to hydraulic phenomena) will co-sponsor, attend, and contribute to this symposium. These topics are of sufficient breadth, depth, and applied importance to be of significant interest to a broad sector of the AFS membership.
3. Preparing a technical paper for publishing the “state-of-knowledge and development needs to improve fish passage and protection. Of the Committee’s new initiatives, this is the least organized at this time. This technical paper would be published in *Fisheries* and could be a condensed summary of the Nashville summary noted above.

Telemetry Committee: Bioengineering also established an ad hoc committee to develop a “Unified Codeset” to support aquatic telemetry monitoring. Radio and acoustic telemetry have become essential tools in the development and improvement of fish passage solutions. With the development of pulsed codes, it has become possible to monitor multiple, even hundreds of unique codes simultaneously on a single frequency. To date, manufacturers have each developed their own codes, which can only be decoded by their own receivers. This has prevented end-users from selecting which transmitters or receivers best suit their needs: having invested in a given receiver users become obligated to purchase tags from that same manufacturer. The Section is attempting to develop a ‘Unified Codeset’ that will provide a solution to this problem. In an ad hoc committee effort that involves both developers and end users, the Bioengineering Section hopes to arrive at consensus over Codeset specifications, including the number and width of pulses, as well as the intervals between them. If successful, this Codeset may serve as a standard for all manufacturers to design receivers around, encouraging competition among providers, collaboration among users, and improving flexibility in study designs. A grant proposal has been developed and is has been distributed to potential funding organizations for consideration. The ad hoc committee is being chaired by the Section’s President-elect Ted Castro-Santos, USGS Conte Anadromous Fish Laboratory, tcastrosantos@acad.umass.edu; (413) 863-3838.

Target AS 2.3a – AFS Units hold conferences, symposia and books focusing on holistic management practices and stewardship topics

The Section is considering starting annual Continuing Education Courses on Fish Passage and Protection as part of AFS Annual Meetings. The first course may be held, subject to further consideration and the approval of the AFS Nashville Organizing Committee, at this year's annual meeting. The subject of the first course (full-day of lectures) would focus on the current state of knowledge on upstream fish passage. Future courses would focus on downstream passage and fish screening.

Bioengineering Section held its 5th Symposium at the 2007 AFS Annual Meeting in San Francisco. This major symposium has been held on a 5-year basis although more frequent symposia are planned for the future, including the symposia noted above for Nashville, TN. Tim Brush, former Section President, is the lead Editor in assembling papers from the presentations in a proceedings to be available as an AFS publication in 2010.

The proceedings of the Section's 4th Bioengineering Symposium which was held in 2002 in Baltimore was published by AFS and available for purchase at the AFS Annual Meeting in Ottawa. Steve Amaral, Dilip Mathur and Ned Taft were the editors of the proceedings titled "Advances in Fisheries Bioengineering".

ITO 4.2, MS3.1. Units to develop or enhance their Web sites and/or discipline-specific electronic mailing lists with particular emphasis on outreach to other users

Our section website, while operating, is in need of updating and changes are planned for 2009. The Section is hoping to use the services of AFS staff on a part-time basis to help improve and maintain its web site.

The Section's list-serve has been updated with the latest membership information; however, it continues to be a labor intensive effort to compare the membership list provide by the parent society on a semi-annual basis with the ListServe and make corrections as necessary. A more formal linkage between the ListServe and the AFS Parent Society membership list would be more effective.

The Section's newsletter was delivered to the membership in September 2008. The BES Newsletter has been an annual effort; however, the Section will try and increase the newsletter's frequency to quarterly issues such that information is more timely and of greater value to the membership.

Other Goals Entries:

The Section's Bylaws, primarily from recommendations by AFS's constitutional consultant Gwen White, and with some relatively minor recommended changes by the current EXCOM, is being reviewed and voted on by the Section membership. Results and final Bylaws will be available by the 2009 Governing Board Meeting in Nashville.

New Initiatives

The Section has developed a Student Travel Award Program. Student attendance at AFS Annual and Division meetings frequently is problematic because of the costs for travel and accommodations. To encourage Annual and Division meeting participation by students specializing in bioengineering-related research, the Section established a travel award program to reimburse travel costs up to a maximum of \$1,000.00. Two awards will be made each year. Additional awards are possible and subject to BES Executive Committee (EXCOM) authorization. Eligibility and application requirements are in development; however, the major goal is support student presentation of an oral or poster presentation at the Annual or Division Meeting (note: alternative meeting presentations are possible subject to review and approval of the BES EXCOM). The first awards will be made for the 2009 Annual Meeting in Nashville.

(B) Recommendations or Suggestions for Future Consideration:

None at present

Section Finances:

The Section has a treasury balance of approximately \$21,000. The Section contributed \$5,000 to publication of the 2002 BES Symposium Proceedings and \$500 to the Skinner Education Challenge.

The remaining balance will be reduced in the future via the Section's developing Student Travel Award Program.