



# Fish Health Section



## FHS NEWS – May 2023

**Fish Health Section website:** <https://units.fisheries.org/fhs/>

**Fish Health Section Facebook Site:** <https://facebook.com/FishHealthSectionAFS>

**Fish Health Section Twitter feed:** @AFSFishHealth

Would you like your recent open-access publication featured on our Twitter feed? We would like to share one publication per week. Just fill out the form at: <https://forms.gle/NWVXEFOGcdYME6gh8>.

**Membership notice:** Starting in March 2023, only paid FHS members will receive newsletters and communications from the section. Thank you to all the renewing members! You are what makes this section successful! Make sure to add [fhs@afsmembers.simplelists.com](mailto:fhs@afsmembers.simplelists.com) to your safe list to continue to receive communications from the section!

## QA/QC Committee Update

The laboratory QA/QC committee has recently updated applications and created renewal criteria for our Tier 1 and Tier 2 programs. The updated material is currently available on the FHS [website](#) so we encourage everyone to visit this site and participate in improving laboratory QA programs for our aquatic animal health laboratories.

## MEETINGS, WORKSHOPS AND COURSES

### Western Fish Disease Workshop

June 6-8, 2023

Parksville, B.C.

<https://event.fourwaves.com/cbd19bf6-2dec-4ea7-bfd4-6762a939ace5/pages>

**Hope to see many of you there!**

Greetings from the organizing committee for the upcoming WFDW **June 5-8<sup>th</sup> in Parksville BC!** For all of the information that you need and to submit your abstract and registration, please go to the event website at <https://event.fourwaves.com/cbd19bf6-2dec-4ea7-bfd4-6762a939ace5/pages>. If you have any questions, please don't hesitate to reach out to Mark Higgins at [mark.higgins@dfo-mpo.gc.ca](mailto:mark.higgins@dfo-mpo.gc.ca)

## 2023 Joint Meeting of the Northeast Fish Health Committee and the AFS Fish Health Section



### **“Applying Research: Bridging the Gap Between Aquatic Animal Health Research and Inspections”**

**University of Vermont, Burlington, Vermont  
July 24 – 27, 2023**

**Call for Papers/Posters** – see attached .pdf for details.

The 2023 Annual Meeting of the AFS Fish Health Section will be held jointly with the Northeast Fish Health Committee (NEFHC) for the first time on July 24-27, 2023 in Burlington, VT! The theme for the meeting is “Applying Research: Bridging the Gap Between Aquatic Animal Health Research and Inspections”. The venue for the meeting is the University of Vermont. Room rates are extremely affordable for Fall in New England; \$79 per night for single and \$59 per person per night for a double. The University is on beautiful Lake Champlain and only a few blocks from the [Church Street Marketplace](#) – Vermont’s award-winning open-air mall featuring over 100 places to shop and dine.

The FHS looks forward to co-hosting this meeting with the NEFHC and provides a tremendous opportunity for learning more about fish health research and topics unique to the Northeast US and provides an opportunity to attract our Canadian colleagues to the meeting.

The meeting will begin on July 24-25 with the Northeast Fish Health Committee Meeting, followed by a Continuing Education Course on July 25<sup>th</sup>, and the FHS meeting will occur on July 26<sup>th</sup>-27<sup>th</sup>. We are planning the following special sessions: (1) “Fish Health Research/Topics in the Northeast US, (2) The Role of Thiamine in Fish Health and (3) Freshwater Mussel Health What We Know and Don’t Know, plus several general sessions.

### **REGISTRATION**

Early registration ends **June 24, 2023**. The registration fee (U.S. dollars) includes a reception on Tuesday evening with heavy hors d’oeuvres, electronic workshop proceedings, refreshments at breaks, breakfasts, and luncheons on each of the two full days of the workshop (Wednesday, Thursday), and a banquet dinner on Thursday night. Late registration will incur an additional fee of \$50 (U.S. dollars), for each registration category. Early registration prices are:

NEFHC Meeting Registration (July 24-25)	\$135
Continuing Education Session (July 25)	\$125
FHS Meeting Member Regular Registration (July 26-27)	\$375
FHS Meeting Non-Member Regular Registration (July 26-27)	\$425
FHS Student Registration	\$250
One-Day Registration	\$188
Additional Banquet Ticket	\$ 60
Additional T-Shirt (one is included in general registration cost)	\$ 20

**Lodging** (Link coming soon)

### **University of Vermont**

Rooms for the conference are \$79/night for a single and \$59/person/night for a double.

There are hotels available in the area if you wish to stay off-campus. We do not have contracts with any of the local hotels.

**Directions/Travel:** The University of Vermont is only minutes away from [Burlington International Airport](#). Transportation from the airport to the hotel, such as taxis, Uber, and Lyft, are readily accessible from the airport.

[Rental cars](#) are also available from the airport, and if this option is used, the University does charge \$10/day for parking.

### **Student Travel Awards: *Application deadline May 8, 2023***

The AFS-FHS is pleased to announce that the Snieszko Student Travel Awards will be available to help students with the cost of attending the 2020 Joint Meeting of the NEFHC and the AFS-FHS. These awards of up to \$2000 to allow students (undergraduates, graduates, or veterinary) post-docs or residents to give an oral or poster presentation at the conference. For more details, including application requirements, please refer to <https://units.fisheries.org/fhs/about/awards/>. Please direct all inquiries and submissions to the Chair of the FHS Awards Committee at [sirisaac\\_standish@fws.gov](mailto:sirisaac_standish@fws.gov)

### **Continuing Education:**

A full day of Continuing Education, entitled “**Molecular biology tools: from diagnostics to understanding epidemiology to guide aquatic animal health management**”, will be held on July 25<sup>th</sup>. Molecular biology has revolutionized the aquatic animal health lab, providing accurate and sensitive methods to detect pathogens. As the technology is constantly improving and the price continues to drop, molecular biology techniques can be applied in innovative ways to improve our understanding of aquatic animal health. Though the technology has significantly improved disease diagnostics and pathogen discovery, it has also enhanced our understanding of epidemiology. This continuing education course will cover some of the basics of molecular biology, how such techniques have been used to advance aquatic animal health, and benefits of this research to fish health managers and aquaculturists. Pending final CE committee approval, this session will provide 6 RACE CE credits.

We look forward to seeing all of you at the meeting in June. For additional information please contact: Anita Kelly [amk0105@auburn.edu](mailto:amk0105@auburn.edu) (334-624-4016) or Tom Jones [Tom.Jones@vermont.gov](mailto:Tom.Jones@vermont.gov) (802-793-6781).

**Best Student Presentation and Poster Awards Announcement** – see attached .pdf for details.

## **JOBS/GRADUATE ASSISTANTSHIPS**

### **Blue Book Coordinator**

#### **American Fisheries Society Fish Health Section**

Closes June 15, 2023

We are seeking a part-time candidate to oversee activities related to maintaining and revising the AFS Fish Health Section Blue Book, Suggested Procedures for the Detection of Certain Finfish and Shellfish Pathogens, hereafter referred to as the Blue Book. The Blue Book is currently undergoing a revision to reorganize and add content, as well as a change to the structure of its oversight committees. The position duties for the Blue Book Coordinator will be to coordinate meetings/activities within and between Blue Book committees, and edit and manage documents (e.g., maintaining revision history, facilitating review processes, and ensuring consistent formatting) to support revision processes. The candidate is expected to send communications to the FHS members regarding Blue Book updates and to post information for comment from FHS members. This is an excellent opportunity to interact and engage with peers within the diverse branches of the aquatic animal health community, and to help lead an effort to update this important reference within the AFS Fish Health Section. All duties are expected to be performed virtually, though funding will be made available for travel to provide in-person updates at FHS meetings.

Funding to support this position is secured until December 31, 2023, and dependent on funding, this position could be extended for up to an additional 3 years. It is anticipated that about 5-10 hours per week will be dedicated to this work, though this may vary from week to week. Pay will be compensated by submitting hours to the AFS on a quarterly basis.

See attached .pdf for more information.

### **M.S. Position in Aquaculture Microbiology**

#### **Auburn University**

School of Fisheries, Aquaculture and Aquatic Sciences

Auburn Alabama

Apply by June 9, 2023

A Master of Science (M.S) position is available at Auburn University. The incoming student will be a Graduate Research Assistant in Dr. Tim Bruce's Fish Health Lab within the School of Fisheries, Aquaculture and Aquatic Sciences (SFAAS). Research in the Bruce lab focuses on host-pathogen interactions in cultured fish species, nutritional aspects of fish health, and fish vaccines/therapeutics.

#### **Responsibilities and tasks**

This M.S. project will involve experimental laboratory studies (~80%) and in vivo trial work with catfish (~20%) Specifically, this M.S. thesis research will examine bacterial growth dynamics and microbial interactions. The bacterial species involved in this project are relevant to U.S. catfish aquaculture and the project will involve genomic and proteomic analyses. Overall, the student will be expected to conduct an independent research project followed by the writing and defense of a detailed thesis.

See attached .pdf for details.

## **M.S. assistantship in Catfish Nutrition**

### **Mississippi State University**

Department of Wildlife, Fisheries and Aquaculture

College of Forestry Resources

~20,000/year (before taxes) + tuition + health insurance

Start date: August 2023

### **Description**

The M.S. student will take classes on the main campus at Starkville, MS, and conduct the research in Stoneville, MS, at the Thad Cochran National Warmwater Aquaculture Center. The student will be trained in the nutritional aspects of catfish aquaculture, ingredient/feed digestibility, nutrition trials, immunological assays, proximate composition analyses, etc.

### **Required qualifications:**

- B.S. degree in Aquaculture, Fisheries, Nutrition, Microbiology, or related sciences with GPA>3.2
- If the applicant is not a U.S. citizen, then the TOEFL exam for English proficiency must be taken. The TOEFL score should be a minimum of 79.
- Interested candidates should send an e-mail to Dr. Fernando Yamamoto ([fyy5@msstate.edu](mailto:fyy5@msstate.edu)) with the subject line: "M.S. applicant 2023" with C.V. and transcript (B.S.)

## **Zebrafish Related Job Announcements**

<https://wiki.zfin.org/display/jobs/Zebrafish-Related+Job+Announcements>

## **RESOURCES/NEWS**

### **Changing jobs**

FHS Past-President Gary Marty is retiring from his position as a diagnostic fish pathologist with the British Columbia, Canada, Ministry of Agriculture and Food, effective June 9, 2023. He is not retiring from fish pathology; instead, he will continue providing diagnostic, teaching, and research services as a private fish pathology consultant. His new email address is [gdmarty.FPC@telus.net](mailto:gdmarty.FPC@telus.net).

### **Join us for a Free On-Line Symposium with CE Credits**

**June 1, 2023 8:00 AM –2:00 PM PDT**

**Hosted by the US Fish and Wildlife Service**

**Pacific Region Fish Health Program**



### **Does veterinary intervention interfere with the adaptation of wild animals to a rapidly changing world?**

The health of wild animals is being challenged by climate change and by other human impacts to critical ecosystems. Veterinary medicine can address some of these emerging disease problems, but intervention in the health of wild animal populations triggers many complex ethical and biological questions.

- Are we interfering with natural selection and preventing the evolution of traits that would allow species to survive?



- Is it ethical to risk making wild animal populations dependent on human intervention when that intervention cannot be guaranteed over the long term?
- What are the ethical implications of not treating diseases that have a clear impact on animal health and welfare?

To answer these questions, we have gathered a panel of speakers that will look at current examples of these ethical and biological challenges and examine the human response and its implications. The international panel of seven presenters will discuss aquatic and terrestrial animals including Pacific salmon, amphibians, red wolves, bison, and more.

**To register for this free symposium [Click Here](#)**  
**For more information contact: [WildlifeSymposium@fws.gov](mailto:WildlifeSymposium@fws.gov)**



## **We are pleased to announce the AFS-FHS Summer Seminar Series is back for another year!**

Over the past three years, graduate students and early career professionals have had limited chances to network or share their important work. This summer seminar series provides an avenue for young scientists to showcase their work in a time of limited travel budgets and other restrictions.

If you missed the previous year's series, the presentations have been archived here:

<http://z.umn.edu/fishhealthseminar>.

## **We will again be awarding Best Student Paper Awards to support student travel, made possible by our generous sponsors!**

Thanks to generous contributions from our sponsors, we have been able to award 12 student travel awards over the past three years and anticipate the same level of support this year.

### **Want to present?**

This is a low-stakes opportunity for students and early career professionals to introduce themselves to a mix of lab groups from across the country and show off their work. Presentations (20-minute talk followed by 5-minute Q&A) will take place on Thursday afternoons (12-1 pm Central Time) from May 4th - Aug 24th. Eligibility for the best presentation awards will be limited to active AFS-FHS student members so make sure your membership is up-to-date!

Slots are limited and will be allotted in a first come, first serve basis. Preference will be granted to active AFS-FHS student members so update your student membership now!

### **Want to be notified of upcoming seminars?**

Anyone interested in receiving announcements regarding upcoming seminars and abstracts can join the AFS Summer Student Seminar Listserv.

The seminars are free and open to the public - please forward these announcements to your networks. The seminar calendar and Zoom access information will be available mid-April.

**Important links:**

[Student and early career professional presentation signup.](#)

[AFS-FHS Student Seminar Series Listserv](#)

[Seminar calendar and Zoom access information](#)

If you have any questions, please don't hesitate to contact us. We hope to see you this summer!

Matt Griffin ([matt.griffin@msstate.edu](mailto:matt.griffin@msstate.edu))

Megan Shavaliier ([shavali1@msu.edu](mailto:shavali1@msu.edu))

Nick Phelps ([phelp083@umn.edu](mailto:phelp083@umn.edu))

**Aquatic Animal Drug Approval Partnership (AADAP) Updates are now available online (new link):** <https://www.fws.gov/library/collections/aquatic-animal-drug-approval-partnership-update>

**NEFHC and AFS FHS Joint Meeting**  
**July 24-27, 2023**  
**Burlington, VT**

**Call for Papers/Posters:**  
***Abstract/Title deadline June 24, 2023***

Individuals interested in presenting an oral presentation or poster can submit a complete abstract using the guidelines and submission process outlined below. If you are interested in presenting a case study during the first evening's social, please submit an abstract via the guidelines below. The deadline for submitting abstracts and/or case titles is ***June 24, 2023***.

**Guidelines for Abstract Preparation (oral presentation and poster)**

1. Prepare in Microsoft Word format.
2. The abstract must fit on a single side of a page with margins set at 1" on all sides.
3. Use Times New Roman 12-pitch font.
4. Center the title. Genus and species names should be in italics.
5. Provide a double space between the title and authors.
6. For each author, provide first name, middle initial and last name.
7. Use bold script for the author presenting the paper.
8. Follow each name with a numeric superscript to denote affiliations.
9. Provide a single space between authors and affiliations.
10. Affiliations should include mailing addresses plus zip codes.
11. Provide double space between affiliations and the body of the abstract.
12. An abstract is needed for the Tuesday night case studies and the main meeting scientific talks
13. Please email abstracts to [amk0105@auburn.edu](mailto:amk0105@auburn.edu) by **June 24, 2023**

**Guidelines for Oral Presentation**

1. PowerPoint format (PC).
2. General session talks will be in 15-minute allotted slots. Recommend 12 minutes for presentation and 3 minutes for questions.
3. Make sure the fonts in the presentation are greater than 24 pitch
4. **Compress picture files, please!** This significantly reduces the size of your file and shortens loading times between talks. To reduce the size of your file:
  1. Click on the picture to be compressed.
  2. Click on **Picture Format**.
  3. Click on **Compress Picture**.
    - a. To compress the current picture only, check **Apply only to this picture** under **Compress options**. To compress all pictures in the presentation, uncheck **Apply only to this picture** under **Compress options**.
    - b. Check **Delete cropped areas of pictures** under **Compression options**.
    - c. Under **Resolution**, select **Web (150 ppi): good for web pages & projectors**.
    - d. Click **Ok**.



5. PowerPoint presentations must be uploaded to  
<https://drive.google.com/drive/folders/10clLBYey1QqyOSy2fCH8TcGYCVgXUDfkWEwtcw51UUrFNj7Rch6QXkLrw7iIOXuXzYDqNWjL?usp=sharing>

Be sure to fill in the submission form completely. **Note, it will not be possible to revise your PowerPoint file or upload a new version after submission, nor during the in-person venue (i.e., we will not be uploading slide decks at the meeting); please plan accordingly.** All submitted PowerPoint presentations will be linked to a Master Program to ensure a seamless meeting, so **be sure to provide your talks by the appropriate deadline!**

#### **Guidelines for short case reports – casual presentation during evening social**

1. Anyone can present a short case study for review during the Monday evening social.  
**Must be unusual or uncommon cases and not shorted research reports.**
2. Case studies should be **8 minutes with 2 minutes** for questions. They can be presented as a PowerPoint, general discussion, Haiku, or song and dance.
3. This is an opportunity for everyone to present and discuss interesting case studies casually, so feel free to select the most appropriate delivery method.
4. Please upload abstracts and presentations to the links provided above by **June 24, 2023**.

#### **Guidelines for Posters**

1. The typical size of a poster is 91 cm x 112 cm (36" x 44") in a landscape
2. Column arrangement: A 3-column format best fits this size poster in landscape format. The flow of material should be from top to bottom of each column and left to right among columns.
3. Leave 3.8 cm (1.5") between columns
4. Highlighting the sections: This can be done in several ways.
  - a. One can use thin-lined borders around sections or blocks of subsections to emphasize how items are grouped.
  - b. Light-colored background fill can also be used to highlight different sections.
5. Use of photographs as backgrounds is not recommended, because legibility is usually compromised.
6. Background: Light pastel backgrounds are attractive and allow use of contrasting font colors, such as black, dark blue, and red. White backgrounds are acceptable, though they are less attractive than colored ones.
7. Font type and size: Sans serif typeface such as Arial is best for good visibility at a distance; use the same font type throughout.
  - a. Title - 72 point or larger; keep it short, not more than 80 characters including spaces.
  - b. Authors' names and affiliations - 48 point.
  - c. Section headings - 36 point, bold.
  - d. Text - 28 point.
  - e. Graphs and tables - all numbers and labels 28 point or larger.
  - f. Graph bars and symbols – use colors; avoid cross hatching.
8. Acknowledgments – 20 to 24 point
9. Please set up posters after you have registered.
10. Posters will be displayed for the entire conference, but a poster session is scheduled for Wednesday, July 26, from 5:30-7:00 pm.

## **Best Student Presentation and Poster Awards Announcement**



Students presenting papers or posters at the next AFS-Annual Meeting have the opportunity to compete for the best student presentation and poster awards. The 2023 AFS-Annual meeting is to be held July 24<sup>th</sup>-28<sup>th</sup> in Burlington, Vermont, as a joint meeting with the Northeast Fish Health Committee. Best presentation awardees may win up to \$400 and best poster awardees may win up to \$200.

**To compete, students must simply state their interest in competing for the award when submitting their abstract. Students must be members of the FHS to participate.**

Presentations will be judged on:

### **Presentation Content**

1. Introduction: Provides broad conceptual framework and overview of previous work, and the hypothesis and/or objectives are clearly stated
2. Methods: Originality, appropriate use of methods/statistics, and effort required (short vs. long study)
3. Results and Discussion: Significance of contribution, conclusions well supported, relevance of findings to the field, placed in border context, and originality of the work

### **Presentation Style and Delivery**

1. Ability to speak clearly
2. Organization of presentation
3. Quality of presentation graphics/images (meaningful, clearly labeled, etc.)
4. Quality of delivery: Minimal use of jargon, not reading slides, maintain eye contact with audience
5. Time management: met time limits
6. Effect on audience: generated lots of questions, excitement vs. silence

Posters will be judged on:

### **Poster Content**

1. Abstract: Quality of the summary and quality of the writing
2. Introduction: Provides broad conceptual framework and overview of previous work, and the hypothesis and/or objectives are clearly stated
3. Methods: Originality, appropriate use of methods/statistics, and effort required (short vs. long study)
4. Results and Discussion: Significance of contribution, conclusions well supported, relevance of findings to the field, placed in border context, and originality of the work

**Poster Style and Presentation**

1. Adhered to poster layout criteria
2. Emphasis on images/graphic elements over text
3. Visual appearance
4. Organization of poster
5. Quality of presentation graphics/images (meaningful, clearly labeled, etc.)
6. Effect on audience: Generated much attention

Feel free to contact members of the Awards Committee with questions.

Awards Committee

Isaac Standish, Chair ([sirisaac\\_standish@fws.gov](mailto:sirisaac_standish@fws.gov))

Nicole Nietlisbach ([nicole.nietlisbach@wisconsin.gov](mailto:nicole.nietlisbach@wisconsin.gov))

Luke Iwanowicz ([liwanowicz@usgs.gov](mailto:liwanowicz@usgs.gov))



## Fish Health Section - American Fisheries Society

### **Position Announcement**

The American Fisheries Society Fish Health Section (AFS FHS) is seeking a Part-time Blue Book Coordinator.

**Position Description:** We are seeking a part-time candidate to oversee activities related to maintaining and revising the AFS Fish Health Section Blue Book, Suggested Procedures for the Detection of Certain Finfish and Shellfish Pathogens, hereafter referred to as the Blue Book. The Blue Book is currently undergoing a revision to reorganize and add content, as well as a change to the structure of its oversight committees. The position duties for the Blue Book Coordinator will be to coordinate meetings/activities within and between Blue Book committees, and edit and manage documents (e.g., maintaining revision history, facilitating review processes, and ensuring consistent formatting) to support revision processes. The candidate is expected to send communications to the FHS members regarding Blue Book updates and to post information for comment from FHS members. This is an excellent opportunity to interact and engage with peers within the diverse branches of the aquatic animal health community, and to help lead an effort to update this important reference within the AFS Fish Health Section. All duties are expected to be performed virtually, though funding will be made available for travel to provide in-person updates at FHS meetings.

Funding to support this position is secured until December 31, 2023, and dependent on funding, this position could be extended for up to an additional 3 years. It is anticipated that about 5-10 hours per week will be dedicated to this work, though this may vary from week to week. Pay will be compensated by submitting hours to the AFS on a quarterly basis.

**Desired qualifications:** The ideal candidate will have excellent communication, writing, and organizational skills, must have good attention to detail, have background knowledge in aquatic animal health and the Blue Book, and will be a member of the AFS FHS. We anticipate hiring the candidate within several weeks after the closing date of the position, so they should be available to start immediately.

Please send a letter of interest, CV and the names and contact information of three references to:

Doug Austin  
Executive Director American Fisheries Society  
dausten@fisheries.org

**Closing Date:** June 15, 2023

## M.S. Position in Aquaculture Microbiology



A Master of Science (M.S) position is available at Auburn University. The incoming student will be a Graduate Research Assistant in Dr. Tim Bruce's Fish Health Lab within the School of Fisheries, Aquaculture and Aquatic Sciences (SFAAS). Research in the Bruce lab focuses on host-pathogen interactions in cultured fish species, nutritional aspects of fish health, and fish vaccines/therapeutants.

### Responsibilities and tasks

This M.S. project will involve experimental laboratory studies (~80%) and *in vivo* trial work with catfish (~20%) Specifically, this M.S. thesis research will examine bacterial growth dynamics and microbial interactions. The bacterial species involved in this project are relevant to U.S. catfish aquaculture and the project will involve genomic and proteomic analyses. Overall, the student will be expected to conduct an independent research project followed by the writing and defense of a detailed thesis.

### Qualifications

The Bruce Fish Health Lab team is looking for a motivated candidate who has:

- Bachelor's degree in the Microbiology/Biological Sciences
- Detailed knowledge of microbiology and/or fish health
- Proven ability to carry out goal-oriented work and fluent with data management systems and programming software
- Lab competencies in microbiology/ (e.g., culture, identification, sequencing, microbial-based assays)
- Molecular biology skills (e.g., SDS-PAGE/Western blot, gene expression (RT/qPCR), proteomics) are also required.
- Assistance with fish husbandry and conducting aquaculture trials is also required
- Ability to work in a team laboratory setting, as well as independently
- A driver's license is required

### Approval and Enrollment

This M.S. graduate appointment is subject to academic approval, and the candidate will be enrolled in the M.S. program within the School of Fisheries, Aquaculture and Aquatic Sciences (SFAAS). For information about our program please see: <http://sfaas.auburn.edu/programs-of-study/graduate-studies/>

### Salary and appointment terms

This project will be carried out at the E.W. Shell Fisheries Center, which is situated in Auburn, Alabama (<http://sfaas.auburn.edu/e-w-shell-fisheries-center/>). The salary (TBD + fringe benefits) and appointment terms (2 yrs.) are consistent with the current rules for M.S. degree students; typically, a tuition waiver is provided. The student will begin coursework and research in **Fall 2023 or Spring 2024**.

### Application

Please submit your application no later than **9 June 2023**. Applications must be e-mailed to [tjb0089@auburn.edu](mailto:tjb0089@auburn.edu) as **a single .pdf file/packet** containing all materials to be given consideration. The .pdf packet must include:

- Cover letter motivating the application (background, interests, goals)
- Curriculum vitae
- Contact information (e-mail and phone numbers) for three references
- Unofficial transcripts

Please note, documents not sent within this formatting will not be reviewed.

### Further information

For further information about the project and assistantship, please contact Dr. Bruce at [tjb0089@auburn.edu](mailto:tjb0089@auburn.edu). Information on Auburn University may be found here: <http://www.auburn.edu/main/welcome/index.php>