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**Staff:**

**Administration/Facilities:**

Judy Gordon, Center Director  
Patty Crandell, Deputy Center Director  
Vince Bocci, Administrative Officer  
Toni Scholder, Administrative Assistant  
Mark Hack, IT Specialist  
Jim Lowell, Maintenance Worker  
John Holmes, Fish Biologist  
Jeff McLaren, Biological Technician  
Scott Gronbach, Facilities Op Specialist  
Jeff Poole, Water Treatment Plant Operator

**Nutrition:**

Ann Gannam, Regional Nutritionist  
Ron Twibell, Fish Nutritionist  
Nathan Hyde, Biological Technician  
Heidi Hill, Fish Nutritionist  
James Barron, Biologist

**Conservation Genetics:**

Denise Hawkins, Regional Geneticist  
Christian Smith, Conservation Geneticist  
Pat DeHaan, Conservation Geneticist  
Brice Adams, Biological Technician  
Matt Smith, Fish Geneticist  
Jennifer Von Bargaen, Lab Geneticist

**Ecological Physiology:**

Chris Taylor, Regional Eco-Physiologist  
Kyle Hanson, Fish Physiologist  
Ben Kennedy, Fish Ecologist  
Richard Glenn, Microbiologist  
Will Simpson, Fish Ecologist  
Kurt Steinke, Electronics Engineer  
Jerone Anderson, Electronics Technician

**Modeling and Management Decision Support:**

Doug Peterson, Senior Scientist

# Abernathy Staff



Finally after three years of trying to coordinate ~30 different schedules, uniform shirts, and staff comings and goings we were able to have a staff portrait taken in May. Seated, left to right: Christian Smith, Richard Glenn, Chris Taylor, James Barron, Ron Twibell, Kyle Hanson, John Holmes, Doug Peterson, and Ben Kennedy. Middle row, left to right: Pat DeHaan, Jerone Anderson, Ann Gannam, Scott Gronbach, Judy Gordon, Mark Hack, Vince Bocci, Kurt Steinke, Matt Smith, and Jeff McLaren. Back row, left to right: Toni Scholder, Denise Hawkins, Jim Lowell, Will Simpson, Jeff Poole, Brice Adams, Jennifer Von Bargaen, Heidi Hill, and Patty Crandell. Not pictured – Nathan Hyde.

# Program Highlights....

## Nutrition

The low phosphorus feeding trial with spring Chinook funded by Grant PUD was terminated over a period of several days. Fish, water, feed and fecal material leachate will all be analyzed for phosphorus content. The goal is to determine the effect of low phosphorus feed on effluent and the fish.



Ron Twibell and Heidi Hill sampling fish during the low phosphorus feed study. *USFWS: J. Barron*



Wedding news! James Barron married Jamie Peters May 26, 2012 in Oregon City, OR. We wish them all the best.

The Nutrition Program analyzed 29 feed samples for fish feed quality control in May and June as well as one feed sample from the Nez Perce Tribal Hatchery. As part of the routine analyses, all feeds from the hatcheries were checked for rancidity. Ann Gannam wrote the feed memos and then contacted the feed mills when necessary.

## Conservation Genetics

Jennifer Von Barga and Christian Smith completed nine Chinook rapid response events for a total of 233 fish processed providing information on run-of-origin to Livingston Stone NFH. This information is used to select brood stock for the endangered Sacramento River winter-run Chinook salmon program.

Christian Smith completed the Role-Based Security Training (RBST) requirement for possessing an elevated IT account. This account is required for maintaining and backing-up software and data used in the daily operation of the genetics laboratory.

Several members of the applied research programs in Conservation Genetics and Ecological Physiology worked together to collect ribosomal nucleic acid (RNA) samples from juvenile steelhead released from AFTC. The RNA samples will be used to develop gene expression markers which will help hatchery managers determine whether released fish will become residual (non-migrating) or migratory. This work is part of a larger project which aims to genetically profile broodstock at our NFHs.



Collecting RNA samples from residual (non-migrating) hatchery steelhead released from AFTC. These samples will be used to develop gene expression markers to identify whether or not fish are likely to migrate. *USFWS: J. Von Barga*

## Program Highlights cont....

### Conservation Genetics....cont

Jennifer Von Bargen continued work on the Fisheries Operational Needs System (FONS) funded project on the genetic profiling of NFH broodstock. Both Makah and Quinault NFH steelhead programs were on the schedule this month.

The Conservation Genetics Program is getting ready for this year's efforts on the Bonneville Power Administration (BPA) funded comparison of the relative reproductive success of hatchery and natural origin Abernathy Creek steelhead. Jennifer Von Bargen worked on compiling and standardizing all data from the project's beginning in 2004, Christian Smith prepared a presentation for the upcoming Coastwide Salmonid Genetics Meeting (July 9-11, Davis, CA), and Denise Hawkins worked on getting the genetics protocols and methods published in *Monitoringmethods.org*, a new requirement for projects funded by BPA.

Brice Adams continued work on characterizing newly developed Olympic mudminnow microsatellites. The information will be presented later this year at an Olympic mudminnow workshop hosted by the Washington FWO.

Pat DeHaan worked with The Student Conservation Association (SCA) to recruit a summer intern for the Conservation Genetics Program. Brittnay Balbag was hired and began work in the lab. Brittnay is a summer intern from the SCA and will be working on preparing sample collection kits and extracting DNA. Welcome Brittnay!

### Conservation Genetics....cont

Matt Smith traveled to the University of British Columbia, Vancouver B.C. to subsample bull trout tissue from Dr. Rick Taylor's Fraser River bull trout collections. These tissue samples are being used in a study designed to evaluate the postglacial dispersal of bull trout in the Skagit River basin. Ross Lake, formed by Ross Dam extends into British Columbia, and is believed to be the site of a postglacial lake which previously drained into the Fraser River. The Fraser River bull trout samples will allow us to examine the evolutionary history of bull trout populations currently isolated in the Upper Skagit River basin by three hydroelectric dams. This study is being funded by Seattle City Light.



Ross Dam on the Skagit River, WA, October 2003  
*U.S. Army Corps of Engineers*

## Conservation Genetics....cont

Jennifer Von Bargen and Pat DeHaan began genetic marker selection to characterize redband trout from the Great Basin in Oregon. This is a collaborative project with Oregon Department of Fish and Wildlife (ODFW) funded through the FWS Western Native Trout Initiative.

Matt Smith collected tissue samples from steelhead with ODFW biologist Derrek Faber as a part of a multi-year BPA funded project to determine the relative reproductive success of stray hatchery and wild steelhead spawning in two Deschutes River tributaries (Bakeoven and Buck Hollow creeks). Large numbers of out-of-basin, genetically distinct hatchery strays may pose a risk to the genetic integrity and productivity of wild steelhead populations in the basin. This study is designed to assess the effects that naturally spawning hatchery steelhead have on the viability of their wild steelhead counterparts. These effects will be evaluated by measuring adult-to-smolt and adult-to-adult reproductive success (fitness) of wild and hatchery steelhead using a parentage analysis study design.



Smolt trap on Buck Hollow Creek in the Deschutes River basin, June 2012. *USFWS: M. Smith*

## Conservation Genetics....cont



Juvenile steelhead in the smolt trap on Buck Hollow Creek in the Deschutes River basin, OR, June 2012. *USFWS: M. Smith*



Buck Hollow Creek entering the Deschutes River, OR, June 2012. *USFWS: M. Smith*

## Program Highlights cont....

### Ecological Physiology

Screwtrap operations on Abernathy Creek have ended for the year and the Ecological Physiology Program is preparing to start electrofishing Abernathy Creek to capture and tag 3,000 fish with Passive Integrated Transponder (PIT) tags. This work is done yearly to evaluate survival and migration behavior of wild juvenile steelhead.

The Ecological Physiology staff removed PIT tag monitoring equipment from the mouth of Abernathy Creek. The equipment is used to monitor the migration timing of hatchery and wild steelhead smolts leaving the creek each year.

Will Simpson and Kurt Steinke used PIT packing (mobile PIT tag antenna arrays) to assess entrainment and potential mortality of Endangered Species Act-listed steelhead smolts entrained into irrigation canals from the Umatilla River.

Richard Glenn continued work on a joint project with Scott LaPatra at Clear Springs Foods, Inc. regarding the use of rosemary oil on fish feed to control coldwater disease (*Flavobacterium psychrophilum*).

After two years working at AFTC as an electronics technician, Jerone Anderson has moved on and taken a job up the road at Boeing. He will be missed at AFTC, and we wish him the best of luck at his new position.

Chris Taylor reviewed manuscripts for Ecology of Freshwater Fish and Fisheries Management and Ecology.

Chris Taylor participated in a successful thesis defense via conference call for his graduate student at Texas Tech University.

### Modeling and Management Decision Support

Doug Peterson traveled to Montana to coordinate fieldwork for the final year of ongoing aquatic organism passage study in Lolo Creek. He deployed iButton temperature sensors and trained a volunteer field crew that will be conducting fish population surveys and maintaining PIT tag antennas at culverts.



PVC housing and stake used to secure low-cost (~\$20) temperature sensor (iButton) used to collect synoptic stream temperature data for sites in western Montana. SCA intern Victoria O'Byrne waterproofed the thermographs, and developed and assembled the housings. Pictured above is an iButton which is secured within the PVC housing. USFWS



Doug Peterson deploying iButton temperature sensors at a field site in western Montana. USFWS

### **Modeling and Management Decision Support....cont**

An intern, Victoria O'Byrne, arrived at AFTC to begin a 6-month internship. Victoria majors in Land Use and Geographic Information Systems (GIS) at Metro State College in Denver, CO. She will be providing GIS support for the Modeling Program.

Doug Peterson reviewed a manuscript for the Canadian Journal of Fisheries and Aquatic Sciences.

The Modeling and Conservation Genetics programs received funding from FWS Mountain Prairie Region to conduct genetic monitoring of Arctic grayling populations in the Big Hole River and Red Rock Lakes NWR, MT. The study will begin later this summer and will provide important population status and trend information for the Region's upcoming listing evaluation for the Upper Missouri River Distinct Population Segment (DPS) of Arctic grayling.

### **Administration/Facilities**

Stephen Zylstra (Assistant Regional Director Science Applications), Marilet Zablan (Endangered Species Program Manager), Bob Peyton (Refuge Supervisor), and Judy Gordon gave presentations on working for the FWS at the *Meet Business- Careers in Natural Resources within the Federal Government*. This annual informational and networking event is co-sponsored by the U.S. Forest Service and Incight, a non-profit organization whose mission is to empower people with disabilities to be successful in their education, employment, networking, and independence.

### **Administration/Facilities cont....**

Dan Shively, Pacific RO Fish Passage Coordinator, visited and gave a presentation to staff on the decision support tools developed collaboratively with EcoTrust of OR. The decision support tools can be used by managers to assist in informed decision making.

Judy Gordon was announced a member of the Pacific's Region's new Science Coordination Team (SCT). The SCT, lead by the Science Applications Program, was formed based on recommendations in the March 2012, *Region 1 Science Needs Survey Report*. The team's primary role is to serve as an informal "think tank" and coordination mechanism. Its functions include helping define Pacific Region science needs for external partners, reviewing and disseminating regional and national science policies, developing and implementing internal peer review processes, and working collaboratively to enhance access and use of scientific information within the Pacific Region.

Facilities conducted the second hazmat disposal of the year. They removed over 60 lbs. of poisons, 13 gallons of latex paint, 4 gallons of flammable or corrosive liquids, and two dozen aerosol cans that had outlived their expiration dates. Facilities reseeded the lawns, did preventive maintenance of the mower, and inspected the domestic water reservoir. Lastly, so that the Nutrition Program personnel could receive some much deserved relief while working in their lab, a robust A/C unit was installed consisting of a one-of-a-kind exhaust system through the 12" cinder block wall.

## Program Highlights cont....

### Administration/Facilities cont....

Jim Lowell has been spearheading the mitigation efforts of our OSHA non-compliant main office ramp entrance. To date, a pressure treated lumber hand and guard railing has been installed and built to engineering and OSHA requirements. AFTC still has some additional work to do to make this entrance OSHA compliant but we are off to a great start.



Jim Lowell working on the main office entrance ramp.  
USFWS: T. Scholder

The Cowlitz County Corrections Crew conducted landscaping activities for several days. The crew continues to be a terrific bargain and also allows Facilities personnel to work on other important tasks.

Several contractors were onsite assisting with the preparations for the relocation of our hazmat storage building including Hamer Electric and Cal Portland Concrete.

Scott Gronbach attended the bi-annual Environmental Compliance training held at the McNary NWR in Burbank, WA and has already begun to utilize this training in our hazmat locker inventories.

### Administration/Facilities cont....

Scott Gronbach attended a 3-day Federal Business Management System (FBMS) training at the Pacific RO and now looks to tackle the challenge of inputting the FY12 Real Property and Fleet expenditures.

AFTC receives few visitors during the year but the 4 legged variety appear on occasion. A recent visitor had a penchant for the Center Director's newly planted blueberries bushes.



Black-tail deer doe (*Odocoileus hemionus columbianus*)  
AFTC's blueberry bush connoisseur.  
USFWS: T. Scholder

## *Inside Abernathy....*

This issue begins a series of five articles entitled *Inside Abernathy* describing the types of services and capabilities provided by the staff here at AFTC. The goal is to try to bridge the gap between the *Program Highlights* of the newsletter and the web page by better acquainting our readers with the variety of activities conducted by the staff which helps the FWS achieve its mission *to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people.*

As you can see from this and previous issues of our newsletter AFTC, is composed of four Applied Research Programs: Nutrition, Conservation Genetics, Ecological Physiology, and Modeling and Management Decision Support. These programs will be covered in future issues. The focus of this article is the **Administration Program** which provides critical service/support functions, without which the research couldn't happen. The program activities include budget and administrative assistance, facilities/infrastructure maintenance and project management, information technology, and the care/culture of research fish.



Back row from left: John Holmes, Judy Gordon, Mark Hack, Vince Bocci  
Front row from left: Toni Scholder, Patty Crandell, Jeff McLaren

### *Budget and Administrative Assistance*

Vince Bocci, Administrative Officer. Vince provides technical expertise in budget management, forecasting and oversight. His skill in these areas has resulted in successful opportunities to assist other field stations (e.g. Quinalt, Warms Springs, Quilcene, and Makah NFHs). Also Vince acted as a Contracting Officer's Technical Representative (COTR) for American Recovery and Reinvestment Act (ARRA) projects here and at Quinalt NFH.

Toni Scholder, Administrative Assistant. Toni is the primary point of contact for visitors to the facility in addition to her responsibilities with travel, purchasing, time and attendance, and publication of this newsletter. Her skills in these areas were recognized when, upon request, she successfully assisted RO staff with their travel when both Fishery Resources administrative positions were vacant.

## *Inside Abernathy cont....*

### *Information Technology*

Mack Hack, Information Technology Specialist. To put it very simply, Mark keeps all of us here at AFTC connected. He maintains the station's hardware and software, conducts day to day troubleshooting, addresses user access issues, and ensures that the interface between our specialized equipment and the network continues to be operational.

### *Care/Culture of Research Fish*

John Holmes, Fish Biologist. John is the chief culture biologist on our relative reproductive success studies. In addition, he provides technical expertise in the care and rearing of research fish held at the facility.

Jeff McLaren, Biological Technician. Jeff assists John in the care of our research fish and hatchery facility.



Pictured left to right: Jim Lowell, Scott Gronbach, Jeff Poole

### *Facilities/Infrastructure*

Scott Gronbach, Facilities Operations Specialist. Scott provides critical technical assistance through project identification, oversight, and management, including frequent interaction with contractors and RO staff in Fishery Resources and Engineering. He acts as the onsite COTR for all facility-funded (and some Regionally-funded) maintenance projects and as well as our Collateral Duty Safety Officer (CDSO). As work activities become more centralized, with all information retained electronically, Scott's skillset bridges the gap between facility maintenance staff, contractors, facility management and RO staff.

Jim Lowell, Maintenance Worker. Jim, our jack-of-all-trades, keeps our vehicles in running order, operates our heavy equipment, applies his vast construction knowledge in facilities maintenance and rehabilitation, does landscaping work (he really likes rock gardens!), etc. Without him, we literally wouldn't be able to unlock doors, turn on lights, have heat, open windows, etc.

Jeff Poole, Water Treatment Plant Operator. Jeff, of all current employees, has been at AFTC the longest (since 1983) and so has a wealth of facility knowledge. This makes him the perfect person to operate and maintain our water treatment and delivery systems (pipes, valves, pumps, chlorine treatment, filters, flow meters, etc.) and to ensure domestic and general facility water quality.

Look for the write-up on the *Applied Research Program in Nutrition* in the next issue!

## **Workshops, Conferences, and Meetings....**

### **Nutrition:**

- The Nutrition Program attended a meeting with Bio-Oregon/Skretting at their local office. Ann Gannam gave a descriptive presentation of what the Nutrition Program does including our Fish Feed Quality Control Program. Chris Oikawa, Bio-Oregon, gave a presentation concerning their feed production and feed stability, as well as packaging, storage and shipping feed from their Longview, WA site.
- Ann Gannam attended the Lower Snake River Comp Plan (LSRCP) production meeting and gave a presentation, "Fish Feed Issues, questions from managers", to answer feed questions from LSRCP hatchery managers.
- Ann Gannam participated in a conference call to plan the Northwest Fish Culture Conference to be hosted by the FWS from December 11-13, 2012 in Portland, OR.
- Ron Twibell and Ann Gannam attended a brainstorming session with the other AFTC program heads to discuss possible collaborative research projects.
- Ann Gannam, Ron Twibell and Heidi Hill taught a one day continuing education fish nutrition class for the American Fisheries Society (AFS) Western Fish Disease Workshop held in Boise, ID and hosted by Idaho Department of Fish and Game (IDFG).
- Ann Gannam attended a spring Chinook Phenotype Workshop at the Oregon Hatchery Research Center.
- Ann Gannam, Ron Twibell and Heidi Hill taught a fish nutrition workshop at the IDFG Clearwater Hatchery in Orofino, ID for the Nez Perce, IDFG and USFWS hatchery employees. They were also able to tour the Clearwater, Dworshak, Nez Perce Tribal and Kooskia hatcheries.

### **Conservation Genetics:**

- Denise Hawkins, Matt Smith and Christian Smith participated in a Parentage Based Tagging (PBT) coordination meeting, hosted by our partners at the Columbia River Intertribal Fish Commission (CRITFC). The goal of the meeting was to improve standardization among laboratories sharing genetic data for Chinook salmon and steelhead in the Columbia River basin. Greater standardization allows more data sharing and thus reduces the costs of genetic analyses for all parties.
- Denise Hawkins and Matt Smith met with Tim Whitesel and Mike Hudson from the Columbia River Fisheries Program Office (CRFPO) to discuss a collaborative study designed to evaluate genetic variability within and among bull trout populations in the Imnaha River Core Recovery Area. The goal of this study is to aid recovery efforts by providing improved information on population structure, abundance, genetic variability, and effective population size.
- Denise Hawkins participated in the annual review of the Lake Sammamish kokanee conservation supplementation program. The technical working group met at the Washington Department of Fish & Wildlife (WDFW) Issaquah Hatchery where the kokanee are spawned and held until release.
- Brice Adams, Pat DeHaan, and Denise Hawkins met with Brad Thompson and Roger Tabor to discuss preliminary results from the analysis of mudminnow microsatellites developed to assess population structure throughout the range of the Olympic mudminnow.
- The Conservation Genetics Program met with Sitka Technology Group to discuss database needs for the program.

## Workshops, Conferences, and Meetings cont....

### **Ecological Physiology:**

- Kyle Hanson and Benjamin Kennedy attended a workshop entitled “Defining the framework: Climate change response for restoration planning” sponsored by the U.S. Army Corps of Engineers USACE).
- Kyle Hanson presented results from the first year of three year study on eulachon egg development at the “Eulachon Summit” held at the Cowlitz Indian Tribal Office. Other presenters included biologists from the Cowlitz Indian Tribe, ODFW, and WDFW.
- Chris Taylor attended the Lamprey Summit III, co-sponsored by the CRITFC and the FWS. Its purpose was to solidify regional and range-wide commitments to lamprey conservation actions.

### **Modeling and Management Decision Support:**

- Doug Peterson coordinated a conference call with Montana Fish, Wildlife and Parks; FWS - Northern Rockies FWCO to discuss a genetic monitoring project for Arctic grayling.

### **Administration/Facilities:**

- Judy Gordon, Patty Crandell, Scott Gronbach, Ann Gannam, Denise Hawkins, Kyle Hanson, and Doug Peterson attended the *Championing Diversity Workshop* in Portland, OR. The content of this workshop provides practical and meaningful knowledge and skills necessary to effectively advance the principles and practices of diversity and inclusion within the workplace. Funding and support for the workshop came from Rowan Gould, FWS Deputy Director. Also in attendance were Robyn Thorson, Regional Director and Rich Hannan, Deputy Regional Director of the Pacific Region.
- Judy Gordon attended a Hatchery Evaluation Team (HET) at Quilcene NFH. This meeting was followed by a conference call to discuss adult passage above the NFH.
- The *North Pacific Landscape Conservation Cooperative, Science/Traditional Ecological Knowledge Subcommittee* held two webex meetings and a two-day in-person meeting. Judy Gordon attended these meetings as one of the members representing the FWS.
- The Fishery Resources Division of the Washington FWO hosted a Quinalt NFH HET in Lacey, WA. Judy Gordon attended as the FTC representative.
- Judy Gordon accompanied Julie Collins, Deputy Assistant Regional Director for Fishery Resources, to her first meeting as the Federal Representative on the Oregon Hatchery Research Center’s Advisory Committee in Alsea, OR.
- Patty Crandell met with Larry Telles and Tim Mayer regarding the Pacific Regional Climate Change Board (RCB) proposal to provide consistent water temperature monitoring devices for water sources at the NFHs. They decided that a survey for NFH managers was needed to identify water sources and current data collection activities relating to water.
- Patty Crandell attended a RCB meeting in the RO where she and Tim Mayer summarized the status of a RCB supported proposal to provide consistent water temperature monitoring devices for water sources at the NFHs. She also participated in discussions about future of the RCB.
- Ron Twibell, Chris Taylor, and Vince Bocci attended the Leadership Challenge Workshop at the Pacific RO.

## **Workshops, Conferences, and Meetings....**

### **Administration/Facilities cont:**

- Patty Crandell, Doug Peterson, and Kyle Hanson participated in Climate Change Planning Team meetings via phone. Discussions included final report assignments, the final outline, and the meeting with the Winthrop NFH HET in Lacey, WA.
- Judy Gordon and Patty Crandell took part in an orientation to Pacific RO Fishery Resources designed webinar - Social Media Tools. The webinar covered website tools for sharing events and press coverage and best practices for webpage and social media site management.
- Judy Gordon and Patty Crandell participated in a Pacific RO Fishery Resources conference call where Bill Gale presented an update on Climate Change Vulnerability Assessment at Winthrop NFH.

## **Reports and Publications....**

### **Nutrition:**

Colburn H. R., A. B. Walker , T. S. Breton , J. M. Stilwell , I. F. Sidor , A. L. Gannam & D. L. Berlinsky. 2012. Partial Replacement of Fishmeal with Soybean Meal and Soy Protein Concentrate in Diets of Atlantic Cod. North American Journal of Aquaculture 74: 330-337.

### **Conservation Genetics:**

Smith, M. J., D. Hawkins, B. Adams, and R. McCoun. 2012. Genetic characterization of coho salmon (*Oncorhynchus kisutch*) in Agency Creek, a tributary to the South Yamhill River (Willamette Basin, OR). United States Fish and Wildlife Service, Abernathy Fish Technology Center Final Report.

### **Ecological Physiology:**

Simpson, W.G., and K.G. Ostrand. 2011. Effects of entrainment and bypass at screened irrigation canals on juvenile steelhead. Transactions of the American Fisheries Society 141:599-609.

### Student Conservation Association (SCA) Interns

We are pleased to announce the arrival of our first SCA interns! The SCA's mission *is to build the next generation of conservation leaders and inspire lifelong stewardship of our environment and communities by engaging young people in hands-on service to the land.* For the twelve weeks starting on June 18, 2012, Victoria O'Bryne and Brittney Balbag will be working at AFTC in the Modeling/Decision Support and Conservation Genetics programs, respectively. Victoria is assisting Doug Peterson and Kyle Hanson in their climate change vulnerability assessments of the Pacific Region NFHs. Brittney is assisting Jennifer Von Barga in sample preparation and DNA extractions. Welcome!



Victoria O'Bryne, SCA Intern, Modeling/Decision Support



Brittney Balbag, SCA Intern, Conservation Genetics