

# **Stock Synthesis (SS) Stock Assessment Courses in Latin America**

**Locations / Dates: Mar del Plata, Argentina; February 17 - 21, 2014**

**Concepción, Chile; March 3 - 7, 2014**

**Cost:** Participants must support their own travel expenses to participate in the training course and provide their own laptop computers. Otherwise there is no cost to participants.

The course instruction and materials are provided at no cost to participants by Melissa Haltuch, (NOAA Fisheries), Juan Valero (CAPAM-IATTC Visiting Scientist), Billy Ernst (University of Concepción), and Richard Methot (NOAA Fisheries). Classroom space and logistical support are provided at no cost to participants by INIDEP (National Institute for Fisheries Research and Development) in Argentina and the University of Concepción in Chile.

**Number of Participants per Course: 20**

**Language:** The working language is English, but support will be provided in Spanish.

## **Description:**

The goal of this training course is to provide instruction, demonstration, and exercises in fishery stock assessment modeling using the stock synthesis (SS) statistical catch-at-age-model. Stock assessments synthesize life history information and fishery dependent and independent data (surveys) using mathematical models of population dynamics. Results from stock assessments are used to determine stock size and sustainability of the fishery, and evaluate the consequences of alternative fishery management actions. The participants will receive a review of the first principles of population dynamics from a model building perspective. Several levels of SS model complexity will be explored. Participants will either bring their own data or will be provided example data, by the end of the course participants will have an understanding of how to implement a stock assessment as well as be working towards functioning SS models for their particular applications.

Topics covered during the workshop will include 1) Introduction & objectives, 2) Data preparation, 3) Model structure in catch-at-age models, 4) Model fitting, 5) Reference points, 6) Evaluation of alternative management options using stock projections, and 6) Communicating stock assessment results to fishery managers.

While this course provides a solid start for participants learning SS, particularly those that already have some stock assessment background, it is expected that there will be continuing scientific exchange between the instructors and participants as SS models continued to be developed. Priority will be given to course candidates already

responsible/involved in stock assessments and upper level graduate students with some previous stock assessment experience.

**Details:**

Participants are required to bring their own laptops, with Excel, and the program “R” installed. Participants are encouraged to bring their own data with the goal of getting a simple SS stock assessment model up and running.

This five-day course is generally organized as a series of morning sessions that focus on theoretical concepts and afternoon work sessions. These work sessions will be completed in different software environments such as R, MS Excel and the Stock Synthesis Stock Assessment modeling package (ADMB). The final day will be spent working with participants building Stock Synthesis Models with their own data sets.

**Course Instructors:**

Dr. Haltuch has been conducting groundfish stock assessments using Stock Synthesis since 2005 and has experience in the analysis and modeling of fishery survey data.

Dr. Valero has worked in population dynamics and stock assessments internationally for over 15 years and has experience with Stock Synthesis.

Dr. Ernst is an associate professor at the University of Concepción, Chile since 2003, teaching courses on stock assessment and population dynamics.

**Contact for more information and application to the course:**

Juan Valero ([jvalero@iattc.org](mailto:jvalero@iattc.org))

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**Application:**

Deadline: November 1, 2013

Notification of acceptance: December 1, 2013

## **Application Questions:**

What is your current institutional affiliation?

Discuss any previous experience with R, ADMB, and Stock Synthesis.

Discuss previous stock assessment experience.

Will you be bringing a data set to the course to implement a preliminary model?

If yes, for what species/region?

Will you be working collaboratively with another student in the class on the same data set?

If yes, with whom?

### **Stock Assessment Advance Review / Reading:**

University of Washington Stock Assessment Course offered by Dr. Andre Punt:  
<http://courses.washington.edu/fish458/>

U.S. West Coast stock assessments, largely completed in Stock Synthesis:  
<http://www.pcouncil.org/groundfish/stock-assessments/>

NOAA Fisheries Tool Box for download of Stock Synthesis and other stock assessment tools: <http://nft.nefsc.noaa.gov/>

### **R Installation and help:**

The R Project: <http://www.r-project.org/>

University of Washington course on R by Dr. Andre Punt:  
<http://depts.washington.edu/aep/test/Resources.html>

University of Washington course on R graphics by Dr. Trevor Branch:  
<https://catalyst.uw.edu/workspace/tbranch/24589/155403>