0.1 What's New: Zelig Release Notes

Releases listed as "stable releases" have been tested against prior versions of Zelig for consistency and accuracy. Testing distributions may contain bugs, but are usually replaced by stable releases within a few days.

- **3.3-1** (June 13, 2008): Bug-fix release for R.2.7.0. A bug fix for plot.ci() so that it works with mixed effects models (thanks to Keith Schnakenberg).

- **3.3-0** (June 03, 2008): Stable release for R.2.7.0. Updated coxph so that it handles time-varying covariates (contributed by Patrick Lam). A new plot function for survival models (contributed by John Graves). First version dependencies are as follows:

"MASS"	"7.2-41"
"nlme"	"3.1-87"
"survival"	"2.34"
"coda"	"0.13-1"
"sna"	"1.5"
"boot"	"1.2-31"
"nnet"	"7.2-41"
"zoo"	"1.5-0"
"sandwich"	"2.1-0"
"lme4"	"0.99875-9"
"systemfit"	"1.0-2"
"VGAM"	"0.7-5"
"MCMCpack"	"0.8-2"
"mvtnorm"	"0.8-3"
"gee"	"4.13-13"
"mgcv"	"1.3-29"
"anchors"	"1.9-2"
"survey"	"3.6-13"

- **3.2-1** (April 10, 2008): Bug-fix release for R.2.6.0-2.6.2. Fixed the setx() bug for multiply imputed data sets. (Thanks to Steve Shewfelt and Keith Schnakenberg.)

- **3.2** (April 3, 2008): Stable release for R 2.6.0-2.6.2. Adding models for survey data – `normal.survey`, `logit.survey`, `probit.survey`, `poisson.survey`, `gamma.survey`. First version dependencies are as follows:

survey	3.6-13
MASS	7.2-34
nlme	3.1-86
survival	2.34
boot	1.2-30
nnet	7.2-34
zoo	1.4-0
sandwich	2.0-2
sna	1.4
lme4	0.99875-9
coda	0.12-1
systemfit	0.8-5
VGAM	0.7-4
MCMCpack	0.8-2
mvtnorm	0.8-1
gee	4.13-13
mgcv	1.3-29
anchors	2.0

- **3.1-1** (January 10, 2008): Bug-fix release for R 2.6.0-2.6.1. Fixed bugs, improved the code and the documentation for mixed effects models. Thanks to Gregor Gorjanc. Fixed systemfit models due to some API changes in systemfit package. Added some other models (including *.mixed models) in plot.ci

- **3.1** (November 30, 2007): Stable release for R 2.6.0-2.6.1. Adding many new models such as `aov`, `chopit`, `coxph`, generalized linear mixed-effects models, and gee models. Also, several bugs are fixed. First version dependencies are as follows:

MASS	7.2-34
nlme	3.1-86
survival	2.34
boot	1.2-30
nnet	7.2-34
zoo	1.4-0
sandwich	2.0-2
sna	1.4
lme4	0.99875-9
coda	0.12-1
systemfit	0.8-5
VGAM	0.7-4
MCMCpack	0.8-2
mvtnorm	0.8-1
gee	4.13-13
mgcv	1.3-29
anchors	2.0

- **3.0-1 – 3.0-6**: Minor bug fixes. Stable release for R 2.5.0-2.5.1.

- **3.0** (July 20, 2007): Stable release for R 2.5.0-2.5.1. Introducing vignettes for each model. Improving documentation in the Zelig web site, improving citation style, improving `help.zelig()` function, adding gam models, social network methods, logit gee model, adding support for cross-validation procedures and diagnostics tools, etc.

- **2.8-3** (May 29, 2007): Stable release for R 2.4.0-2.5.0. Fixed bugs in `help.zelig()`, and summary for multinomial logit, bivariate probit, and bivariate logit with multiple imputation. (Thanks to Brant Inman and Javier Marquez.) First version dependencies are as follows:

MASS	7.2-34
boot	1.2-27
VGAM	0.7-1
MCMCpack	0.8-2
mvtnorm	0.7-5
survival	2.31
sandwich	2.0-0
zoo	1.2-1
coda	0.10-7
nnet	7.2-34
sna	1.4

- **2.8-2** (March 3, 2007): Stable release for R 2.4.0-2.4.1. Fixed bug in ARIMA simulation process.

- **2.8-1** (February 21, 2007): Stable release for R 2.4.0-2.4.1. Made `setx()` compatible with ordred factor variables (thanks to Mike Ward and Kirill Kalinin). First order dependencies as in version 2.8-1.

- **2.8-0** (February 12, 2007): Stable release for R 2.4.0-2.4.1. Released ARIMA models and network analysis models (least squares and logit) for sociomatrices. First level dependencies are as follows:

MASS	7.2-31
boot	1.2-27
VGAM	0.7-1
MCMCpack	0.7-4
mvtnorm	0.7-5
survival	2.31
sandwich	2.0-0
zoo	1.2-1
coda	0.10-7
nnet	7.2-31
sna	1.4

- **2.7-5** (December 25, 2006): Stable release for R 2.4.0-2.4.1. Fixed bug related to `names.default()`, summary for multiple imputation methods, and prediction for ordinal response models (thanks to Brian Ripley, Chris Lawrence, and Ian Yohai).

- **2.7-4** (November 10, 2006): Stable release for R 2.4.0. Fixed bugs related to R check.

- **2.7-3** (November 9, 2006): Stable release for R 2.4.0. Fixed bugs related to R check.

- **2.7-2** (November 5, 2006): Stable release for R 2.4.0. Temporarily removed ARIMA models.

- **2.7-1** (November 3, 2006): Stable release for R 2.4.0. Made changes regarding the S4 classes in VGAM. The ARIMA (`arima`) model for time series data added by Justin Grimmer. First level dependencies are as follows:

MASS	7.2-29
boot	1.2-26
VGAM	0.7-1
MCMCpack	0.7-4
mvtnorm	0.7-5
survival	2.29
sandwich	2.0-0
zoo	1.2-1
coda	0.10-7

- **2.6-5** (September 14, 2006): Stable release for R 2.3.0-2.3.1. Fixed bugs in bivariate logit, bivariate probit, multinomial logit, and model.matrix.multiple (related to changes in version 2.6-4, but not previous versions, thanks to Chris Lawrence). First level dependencies are as follows:

MASS	7.2-27.1
boot	1.2-26
VGAM	0.6-9
MCMCpack	0.7-1
mvtnorm	0.7-2
survival	2.28
sandwich	1.1-1
zoo	1.0-6
coda	0.10-5

- **2.6-4** (September 8, 2006): Stable release for R 2.3.0-2.3.1. Fixed bugs in `setx()`, and bugs related to `multiple` and the multinomial logit model. Added instructions for installing Fortran tools for Intel macs. Added the R×C ecological inference model. (thanks to Kurt Hornik, Luke Keele, Joerg Mueller-Scheessel, and B. Dan Wood)

- **2.6-3** (June 19, 2006): Stable release for R 2.0.0-2.3.1. Fixed bug in VDC interface functions, and `parse.formula()`. (thanks to Micah Altman, Christopher N. Lawrence, and Eric Kostello)

- **2.6-2** (June 7, 2006): Stable release for R 2.0.0-2.3.1. Removed R × C EI. Changed `data = list()` to `data = mi()` for multiply-imputed data frames. First level version compatibilities are as for version 2.6-1.

- **2.6-1** (April 29, 2006): Stable release for R 2.0.0-2.2.1. Fixed major bug in ordinal logit and ordinal probit expected value simulation procedure (does not affect Bayesian ordinal probit). (reported by Ian Yohai) Added the following ecological inference EI models: Bayesian hierarchical EI, Bayesian dynamic EI, and R × C EI. First level version compatibilities (at time of release) are as follows:

MASS	7.2-24
boot	1.2-24
VGAM	0.6-8
MCMCpack	0.7-1
mvtnorm	0.7-2
survival	2.24
sandwich	1.1-1
zoo	1.0-6
coda	0.10-5

- **2.5-4** (March 16, 2006): Stable release for R 2.0.0-2.2.1. Fixed bug related to windows build. First-level dependencies are the same as in version 2.5-1.

- **2.5-3** (March 9, 2006): Stable release for R 2.0.0-2.2.1. Fixed bugs related to VDC GUI. First level dependencies are the same as in version 2.5-1.

- **2.5-2** (February 3, 2006): Stable release for R 2.0.0-2.2.1. Fixed bugs related to VDC GUI. First level dependencies are the same as in version 2.5-1.

- **2.5-1** (January 31, 2006): Stable release for R 2.0.0-2.2.1. Added methods for multiple equation models. Added tobit regression. Fixed bugs related to robust estimation and upgrade of sandwich and zoo packages. Revised `setx()` to use environments. Added `current.packages()` to retrieve version of packages upon which Zelig depends. First level version compatibilities (at time of release) are as follows:

MASS	7.2-24
boot	1.2-24
VGAM	0.6-7
mvtnorm	0.7-2
survival	2.20
sandwich	1.1-0
zoo	1.0-4
MCMCpack	0.6-6
coda	0.10-3

- **2.4-7** (December 10, 2005): Stable release for R 2.0.0-2.2.2. Fixed the environment of `eval()` called within `setx.default()` (thanks to Micah Altman).

- **2.4-6** (October 27, 2005): Stable release for R 2.0.0-2.2.2. Fixed bug related to simulation for Bayesian Normal regression.

- **2.4-5** (October 18, 2005): Stable release for R 2.0.0-2.2.0. Fixed installation instructions.

- **2.4-4** (September 29, 2005): Stable release for R 2.0.0-2.2.0. Fixed `help.zelig()` links.

- **2.4-3** (September 29, 2005): Stable release for R 2.0.0-2.2.0. Revised `matchit()` documentation.

- **2.4-2** (August 30, 2005): Stable release for R 2.0.0-2.1.1. Fixed bug in `setx()` related to `as.factor()` and `I()`. Streamlined `qi.survreg()`.

- **2.4-1** (August 15, 2005): Stable release for R 2.0.0-2.1.1. Added the following Bayesian models: factor analysis, mixed factor analysis, ordinal factor analysis, unidimensional item response theory, k-dimensional item response theory, logit, multinomial logit, normal, ordinal probit, Poisson, and tobit. Also fixed minor bug in formula (long variable names coerced to list).

- **2.3-2** (August 5, 2005): Stable release for R 2.0.0-2.1.1. Fixed bug in simulation procedure for lognormal model.

- **2.3-1** (August 4, 2005): Stable release for R 2.0.0-2.1.1. Fixed documentation errors related to model parameterization and code bugs related to first differences and conditional prediction for exponential, lognormal, and Weibull models. (reported by Alison Post)

- **2.2-4** (July 30, 2005): Stable release for R 2.0.0-2.1.1. Revised relogit, adding option for weighting in addition to prior correction. (reported by Martin Plöderl)

- **2.2-3** (July 24, 2005): Stable release for R 2.0.0-2.1.1. Fixed bug associated with robust standard errors for negative binomial.

- **2.2-2** (July 13, 2005): Stable release for R 2.0.0-2.1.1. Fixed bug in setx(). (reported by Ying Lu)

- **2.2-1** (July 11, 2005): Stable release for R 2.0.0-2.1.0. Revised ordinal probit to use MASS library. Added robust standard errors for the following regression models: exponential, gamma, logit, lognormal, least squares, negative binomial, normal (Gaussian), poisson, probit, and weibull.

- **2.1-4** (May 22, 2005): Stable release for R 1.9.1-2.1.0. Revised help.zelig() to deal with CRAN build of Windows version. Added recode of slots to lists in NAMESPACE. Revised `install.R` script to deal with changes to `install.packages()`. (reported by Dan Powers and Ying Lu)

- **2.1-3** (May 9, 2005): Stable release for R 1.9.1-2.1.0. Revised param.lm() function to work with bootstrap simulation. (reported by Jens Hainmueller)

- **2.1-2** (April 14, 2005): Stable release for R 1.9.1-2.1.0. Revised summary.zelig().

- **2.1-1** (April 7, 2005): Stable release for R 1.9.1-2.1.0. Fixed bugs in NAMESPACE and summary.vglm().

- **2.0-14** (April 5, 2005): Stable release for R 1.9.1-2.0.1. Added `summary.vglm()` to ensure the compatibility with VGAM 0.6-2.

- **2.0-13** (March 11, 2005): Stable release for R 1.9.1-2.0.1. Fixed bugs in `NAMESPACE` and R-help file for `rocplot()`.

- **2.0-12** (February 20, 2005): Stable release for R 1.9.1-2.0.1. Added `plot = TRUE` option to `rocplot()`.

- **2.0-11** (January 14, 2005): Stable release for R 1.9.1-2.0.1. Changed class name for subsettted models from `"multiple"` to `"strata"`, and modified affected functions.

- **2.0-10** (January 5, 2005): Stable release for R 1.9.1 and R 2.0.0. Fixed bug in ordinal logit simulation procedure. (reported by Ian Yohai)

- **2.0-9** (October 21, 2004): Stable release for R 1.9.1 *and* R 2.0.0 (Linux and Windows). Fixed bug in NAMESPACE file.

- **2.0-8** (October 18, 2004): Stable release for R 1.9.1 *and* R 2.0.0 (Linux only). Revised for submission to CRAN.

- **2.0-7** (October 14, 2004): Stable release for R 1.9.1 *and* R 2.0.0 (Linux only). Fixed bugs in `summary.zelig()`, NAMESPACE, and assorted bugs related to new R release. Revised syntax for multiple equation models.

- **2.0-6** (October 4, 2004): Stable release for R 1.9.1. Fixed problem with NAMESPACE.

- **2.0-5** (September 25, 2004): Stable release for R 1.9.1. Changed installation procedure to source `install.R` from Zelig website.

- **2.0-4** (September 22, 2004): Stable release for R 1.9.1. Fixed typo in installation directions, implemented NAMESPACE, rationalized `summary.zelig()`, and tweaked documentation for least squares.

- **2.0-3** (September 1, 2004): Stable release for R 1.9.1. Fixed bug in conditional prediction for survival models.

- **2.0-2** (August 25, 2004): Stable release for R 1.9.1. Removed predicted values from `ls`.

- **2.0-1b** (July 16, 2004): Stable release for R 1.9.1. MD5 checksum problem fixed. Revised `plot.zelig()` command to be a generic function with methods assigned by the model. Revised entire architecture to accept multiply imputed data sets with strata. Added functions to simplify adding models. Completely restructured reference manual. Fixed bugs related to conditional prediction in setx and summarizing strata in summary.zelig.

- **1.1-2** (June 24, 2004): Stable release for R 1.9.1 (MD5 checksum problem not fixed, but does not seem to cause problems). Fixed bug in `help.zelig()`. (reported by Michael L. Levitan)

- **1.1-1** (June 14, 2004): Stable release for R 1.9.0. Revised `zelig()` procedure to use `zelig2model()` wrappers, revised `help.zelig()` to use a data file with extension `.url.tab`, and revised `setx()` procedure to take a list of `fn` to apply to variables, and such that `fn = NULL` returns the entire `model.matrix()`.

- **1.0-8** (May 27, 2004): Stable release for R 1.9.0. Fixed bug in simulation procedure for survival models. (reported by Elizabeth Stuart)

- **1.0-7** (May 26, 2004): Stable release for R 1.9.0. Fixed bug in relogit simulation procedure. (reported by Tom Vanwellingham)

- **1.0-6** (May 11, 2004): Stable release for R 1.9.0. Fixed bug in setx.default, which had previously failed to ignore extraneous variables in data frame. (reported by Steve Purpura)

- **1.0-5** (May 7, 2004): Replaced relogit procedure with memory-efficient version. (reported by Tom Vanwellingham)

- **1.0-4** (April 19, 2004): Stable release for R 1.9.0. Added vcov.lm method; changed print for summary.relogit.

- **1.0-2** (April 16, 2004): Testing distribution for R 1.9.0.

- **1.0-1** (March, 23, 2004): Stable release for R 1.8.1.

0.2   What's Next?

We have several plans for expanding and improving Zelig. Major changes slated for Version 3.0 (and beyond) include:

- Hierarchical and multi-level models

- Ecological inference models

- GEE models

- Neural network models

- Average treatment effects for everyone (treated and control units)

- Time-series cross-sectional models (via `nlme`)

- Generalized boosted regression model (via `gbm`)

- Saving random seeds to ensure exact replication

If you have suggestions, or packages that you would like to contribute to Zelig, please email our listserv at zelig@lists.gking.harvard.edu.