

Erratum FCS 2017-18

April 20, 2018

Overview of Erratum

This year, in shifting the production of our report publications from a manual reporting process to one that is documented in the R programming language, we were informed by three institutions that there were inconsistencies in the reported data, what had been submitted and what was visible in our research portal. In following up with these institutions, we have identified errors in our production process that are reflected in the reported total compensation data and will be addressed with an erratum. This erratum reflects only the correction described below. Institutional corrections will be reflected in the August publication of final tables and appendices. Only the two columns of total compensation by rank and the benefits as a percent salary are changed. All other data are the same as published on April 11, 2018.

Research Portal versus Published Data

Our research portal reflects the up-to-date values. Institutions can submit corrected or updated values at any time and the research portal reflects the most accurate and up-to-date data we have. The appendices corrected here do not include this updated data – it is only a correction of our final pull for the April publication. Several institutions have entered in more data or corrected since that pull. All data products (besides the research portal) reflect the final pulled data for publication. These will be updated and re-issued in August in a final corrected form.

Description of Error

There were two errors detected in our produced compensation values this year. First, twelve-month and nine-month faculty were not correctly combined in the benefit values. The second correction includes how we calculate the benefits as a percent of salary. In calculating benefits data, we aggregated individual benefits and weighted the total benefits as an average salary by the number of faculty at each reported rank. This is a different approach than used in the research portal, which takes the total expenditure for benefits and divides by the total salary expenditure. The first error interacts with the proportion of twelve-month faculty an institution has and produces increased benefits values depending on how large this cohort is. The second error produces benefits differences from 1 to 4 percent.

We also saw that compensation for institutions reporting by undifferentiated benefits were omitted and have included them in this erratum.

R Code Summary of Problem

Below we produce the R code that generated the original error and the corrected code.

R Code Weighting for Twelve Month Faculty

```
## Original
```

```
maxben = benefitsTotal %>% group_by(ipeds,rank) %>%
  summarise(maxCovered = max(total_covered, na.rm=TRUE),
            totalBenefit = sum(total_expenditure, na.rm=TRUE)) %>%
  left_join(salDF,by=c("ipeds","rank")) %>%
  filter(average_salary != 0) %>%
  # INCORRECT
  mutate(average_total_percent_benefit =
          100 * (totalBenefit/maxCovered)/average_salary) %>%
  select(ipeds, rank, average_total_percent_benefit, totalBenefit)
```

```
# Correct
```

```
maxben = benefitsTotal %>% group_by(ipeds,rank) %>%
  summarise(maxCovered = max(total_covered, na.rm=TRUE),
            totalBenefit = sum(total_expenditure, na.rm=TRUE)) %>%
  left_join(salDF,by=c("ipeds","rank")) %>%
  filter(average_salary != 0) %>%
  # CORRECTED
  mutate(average_total_percent_benefit =
          100 * (totalBenefit)/(average_salary*total_count)) %>%
  select(ipeds, rank, totalBenefit, average_total_percent_benefit)
```

Rcode for Total Benefits as a Percent of Salary

```
# Original
```

```
baps = salDF %>% left_join(maxben, by= c("ipeds","rank")) %>%
  group_by(ipeds) %>%
  # INCORRECT
  summarise(baps =
            round(weighted.mean(average_total_percent_benefit, total_count,
na.rm=TRUE), 1))
```

```
# Corrected
```

```
baps = salDF %>% left_join(maxben, by= c("ipeds","rank")) %>%
  group_by(ipeds) %>%
  # CORECTED
  summarise(totalExpenditure = sum(totalBenefit,na.rm=TRUE),
            totalSalary = sum(average_salary*total_count, na.rm = TRUE)) %>%
  mutate(baps = 100 * totalExpenditure/totalSalary)
```