

# The Shared cM Project – Version 2.0 (June 25, 2016)

Blaine T. Bettinger

The Shared cM Project is a collaborative data collection and analysis project created to understand the ranges of shared centimorgans associated with various known relationships. As of June 2016, total shared cM data for more than 10,000 known relationships has been provided. This is the first update to the original data, released in May 2015. In this update there are more than 4,000 new entries. Additionally, the data for each relationship has been analyzed statistically to remove extreme outliers and produce a histogram to show the distribution.

For more information:

- The Shared cM Project - <http://thegeneticgenealogist.com/2015/05/29/the-shared-cm-project/>
- Autosomal DNA Statistics - [http://isogg.org/wiki/Autosomal DNA statistics](http://isogg.org/wiki/Autosomal_DNA_statistics)

To provide your data for subsequent updates:

- <http://thegeneticgenealogist.com/2015/03/04/collecting-sharing-information-for-known-relationships/>

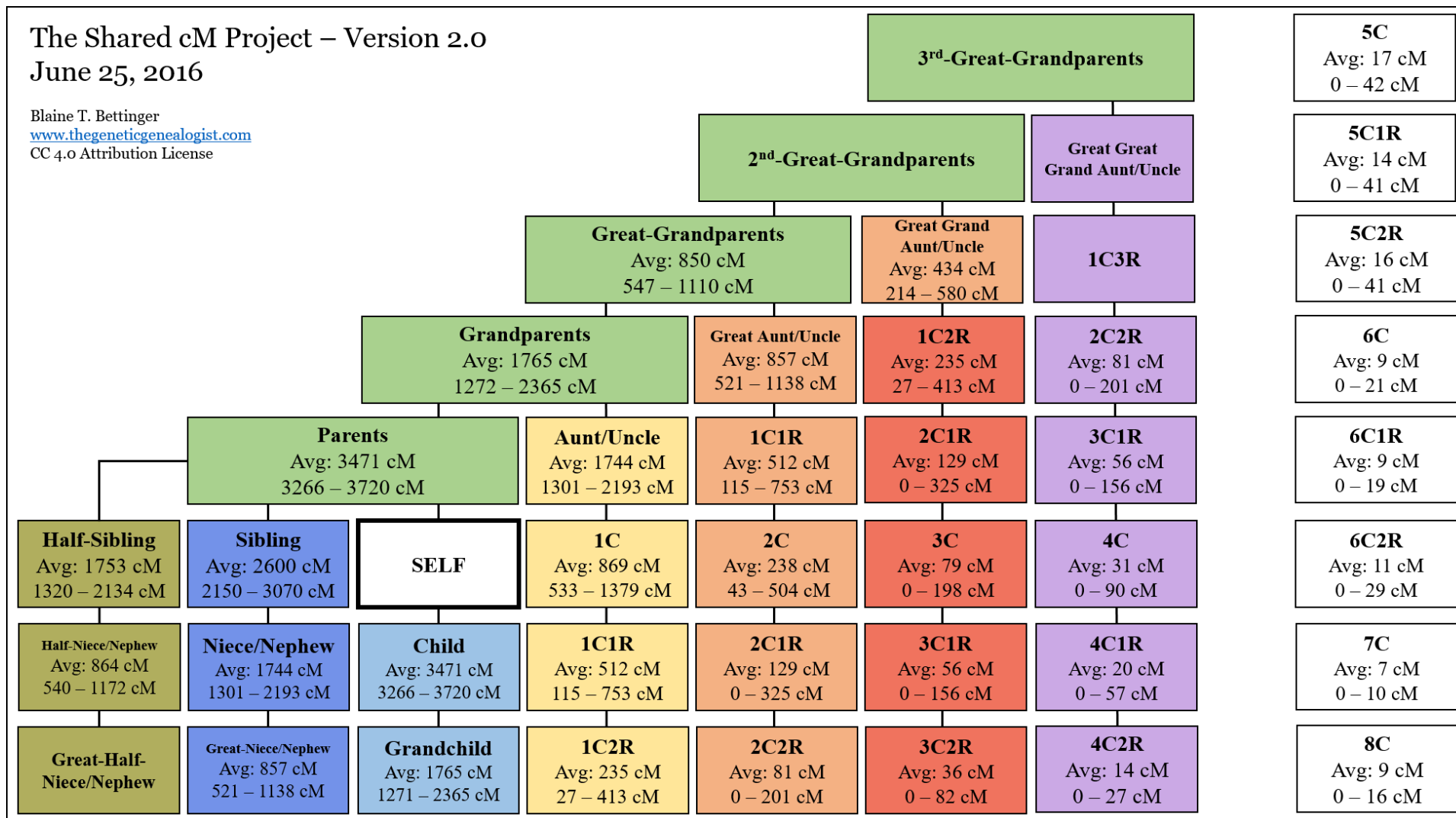
Known issues with the Shared cM Project data:

- **Data entry errors** – some of the information entered by participants is clearly affected by data entry errors (for example, a longest segment begin greater than the total shared cM). When these errors could be *definitively* determined, they were removed.
- **Incorrect relationships (known or unknown)** – some relationships were almost certainly entered incorrectly, which might be due to misunderstandings of “removed” relationships in genealogy. Other relationship errors were clearly due to misattributed parentage events resulting in the believed relationship being incorrect.

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## Histograms

**Histogram** = a graphical representation of the distribution of numerical data

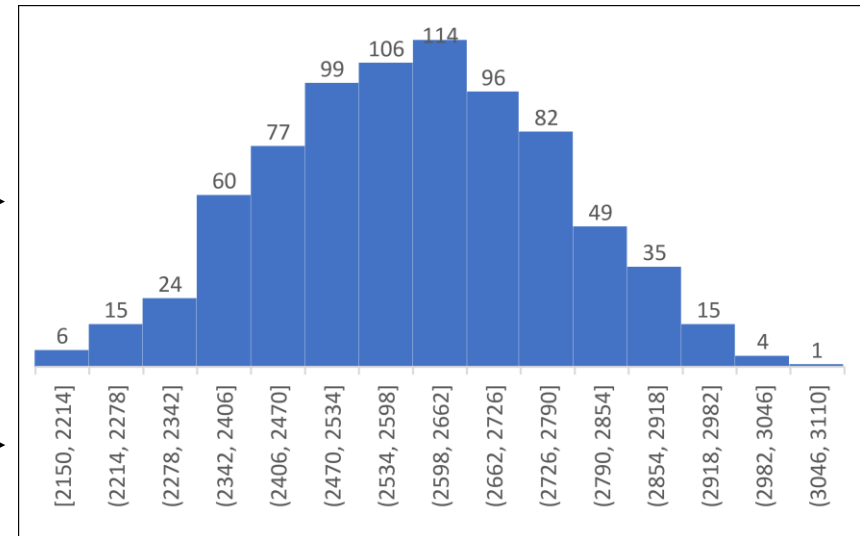
The following steps are followed to create a histogram:

1. Divide entire range of total shared cM (from the smallest amount to the largest amount) into a series of intervals of equal size (called “bins”); and
2. Count how many data points fall within each of the intervals.

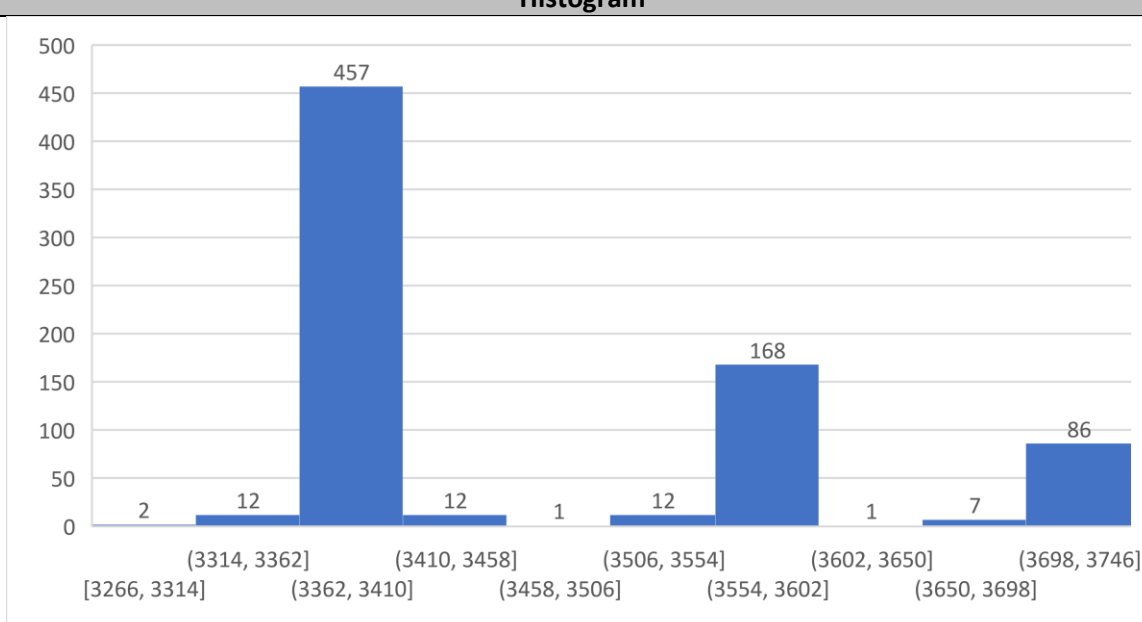
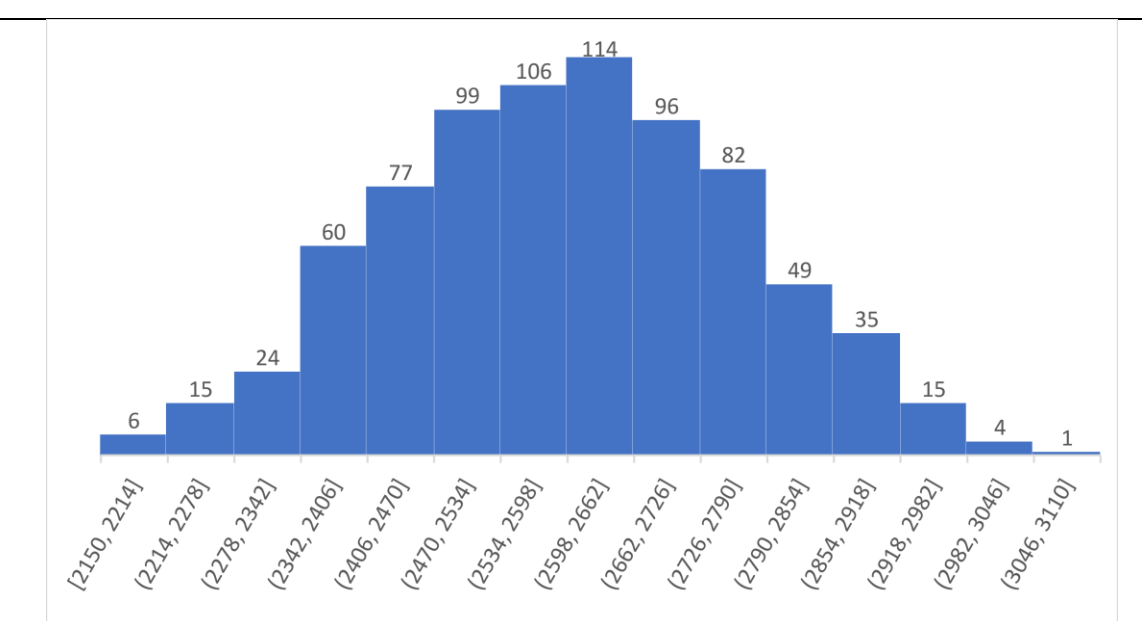
How to read these histograms:

The number at the top of each bar is the total number of data entries for each interval (see “bin,” below). For example, six (6) data entries are in the first interval.

These are “bins,” or consecutive non-overlapping ranges of total shared cM. For example, a total of six (6) data entries were within the bin or range of 2150 to 2214 cM for this relationship (siblings).



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| Relationship | #         | Min  | Average | Max  | Histogram  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
|--------------|-----------|------|---------|------|--|-----------|-----------|--------------|---|--------------|----|--------------|-----|--------------|----|--------------|----|--------------|----|--------------|-----|--------------|-----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|---|--------------|---|
| Parent/Child | 758       | 3266 | 3471    | 3720 |  <table><tr><th>Age Range</th><th>Frequency</th></tr><tr><td>[3266, 3314]</td><td>2</td></tr><tr><td>(3314, 3362]</td><td>12</td></tr><tr><td>(3362, 3410]</td><td>457</td></tr><tr><td>(3410, 3458]</td><td>12</td></tr><tr><td>(3458, 3506]</td><td>1</td></tr><tr><td>(3506, 3554]</td><td>12</td></tr><tr><td>(3554, 3602]</td><td>168</td></tr><tr><td>(3602, 3650]</td><td>1</td></tr><tr><td>(3650, 3698]</td><td>7</td></tr><tr><td>(3698, 3746]</td><td>86</td></tr></table>  | Age Range | Frequency | [3266, 3314] | 2 | (3314, 3362] | 12 | (3362, 3410] | 457 | (3410, 3458] | 12 | (3458, 3506] | 1  | (3506, 3554] | 12 | (3554, 3602] | 168 | (3602, 3650] | 1   | (3650, 3698] | 7  | (3698, 3746] | 86 |              |    |              |    |              |    |              |   |              |   |
| Age Range    | Frequency |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| [3266, 3314] | 2         |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (3314, 3362] | 12        |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (3362, 3410] | 457       |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (3410, 3458] | 12        |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (3458, 3506] | 1         |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (3506, 3554] | 12        |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (3554, 3602] | 168       |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (3602, 3650] | 1         |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (3650, 3698] | 7         |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (3698, 3746] | 86        |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| Siblings     | 789       | 2150 | 2600    | 3070 |  <table><tr><th>Age Range</th><th>Frequency</th></tr><tr><td>[2150, 2214]</td><td>6</td></tr><tr><td>(2214, 2278]</td><td>15</td></tr><tr><td>(2278, 2342]</td><td>24</td></tr><tr><td>(2342, 2406]</td><td>60</td></tr><tr><td>(2406, 2470]</td><td>77</td></tr><tr><td>(2470, 2534]</td><td>99</td></tr><tr><td>(2534, 2598]</td><td>106</td></tr><tr><td>(2598, 2662]</td><td>114</td></tr><tr><td>(2662, 2726]</td><td>96</td></tr><tr><td>(2726, 2790]</td><td>82</td></tr><tr><td>(2790, 2854]</td><td>49</td></tr><tr><td>(2854, 2918]</td><td>35</td></tr><tr><td>(2918, 2982]</td><td>15</td></tr><tr><td>(2982, 3046]</td><td>4</td></tr><tr><td>(3046, 3110]</td><td>1</td></tr></table> | Age Range | Frequency | [2150, 2214] | 6 | (2214, 2278] | 15 | (2278, 2342] | 24  | (2342, 2406] | 60 | (2406, 2470] | 77 | (2470, 2534] | 99 | (2534, 2598] | 106 | (2598, 2662] | 114 | (2662, 2726] | 96 | (2726, 2790] | 82 | (2790, 2854] | 49 | (2854, 2918] | 35 | (2918, 2982] | 15 | (2982, 3046] | 4 | (3046, 3110] | 1 |
| Age Range    | Frequency |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| [2150, 2214] | 6         |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (2214, 2278] | 15        |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (2278, 2342] | 24        |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (2342, 2406] | 60        |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (2406, 2470] | 77        |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (2470, 2534] | 99        |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (2534, 2598] | 106       |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (2598, 2662] | 114       |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (2662, 2726] | 96        |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (2726, 2790] | 82        |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (2790, 2854] | 49        |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (2854, 2918] | 35        |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (2918, 2982] | 15        |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (2982, 3046] | 4         |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |
| (3046, 3110] | 1         |      |         |      |  |           |           |              |   |              |    |              |     |              |    |              |    |              |    |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |              |   |

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| Relationship           | #         | Min  | Average | Max  | Histogram   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
|------------------------|-----------|------|---------|------|---|-----------|-----------|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|---|--------------|---|--------------|---|
| Half Siblings          | 187       | 1320 | 1753    | 2134 | <table><thead><tr><th>Age Range</th><th>Frequency</th></tr></thead><tbody><tr><td>[1320, 1430]</td><td>6</td></tr><tr><td>(1430, 1540]</td><td>20</td></tr><tr><td>(1540, 1650]</td><td>22</td></tr><tr><td>(1650, 1760]</td><td>44</td></tr><tr><td>(1760, 1870]</td><td>44</td></tr><tr><td>(1870, 1980]</td><td>37</td></tr><tr><td>(1980, 2090]</td><td>12</td></tr><tr><td>(2090, 2200]</td><td>2</td></tr></tbody></table>  | Age Range | Frequency | [1320, 1430] | 6  | (1430, 1540] | 20 | (1540, 1650] | 22 | (1650, 1760] | 44 | (1760, 1870] | 44 | (1870, 1980] | 37 | (1980, 2090] | 12 | (2090, 2200] | 2 |              |   |              |   |
| Age Range              | Frequency |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| [1320, 1430]           | 6         |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1430, 1540]           | 20        |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1540, 1650]           | 22        |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1650, 1760]           | 44        |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1760, 1870]           | 44        |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1870, 1980]           | 37        |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1980, 2090]           | 12        |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (2090, 2200]           | 2         |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| Grandparent/Grandchild | 281       | 1272 | 1765    | 2365 | <table><thead><tr><th>Age Range</th><th>Frequency</th></tr></thead><tbody><tr><td>[1272, 1392]</td><td>13</td></tr><tr><td>(1392, 1512]</td><td>21</td></tr><tr><td>(1512, 1632]</td><td>43</td></tr><tr><td>(1632, 1752]</td><td>66</td></tr><tr><td>(1752, 1872]</td><td>46</td></tr><tr><td>(1872, 1992]</td><td>40</td></tr><tr><td>(1992, 2112]</td><td>38</td></tr><tr><td>(2112, 2232]</td><td>9</td></tr><tr><td>(2232, 2352]</td><td>4</td></tr><tr><td>(2352, 2472]</td><td>1</td></tr></tbody></table> | Age Range | Frequency | [1272, 1392] | 13 | (1392, 1512] | 21 | (1512, 1632] | 43 | (1632, 1752] | 66 | (1752, 1872] | 46 | (1872, 1992] | 40 | (1992, 2112] | 38 | (2112, 2232] | 9 | (2232, 2352] | 4 | (2352, 2472] | 1 |
| Age Range              | Frequency |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| [1272, 1392]           | 13        |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1392, 1512]           | 21        |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1512, 1632]           | 43        |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1632, 1752]           | 66        |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1752, 1872]           | 46        |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1872, 1992]           | 40        |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1992, 2112]           | 38        |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (2112, 2232]           | 9         |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (2232, 2352]           | 4         |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (2352, 2472]           | 1         |      |         |      |   |           |           |              |    |              |    |              |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |

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| Relationship            | #         | Min  | Average | Max  | Histogram  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
|-------------------------|-----------|------|---------|------|--|-----------|-----------|--------------|---|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|-----|--------------|-----|--------------|-----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|---|
| Aunt/Uncle/Niece/Nephew | 889       | 1301 | 1744    | 2193 | <table><thead><tr><th>Age Range</th><th>Frequency</th></tr></thead><tbody><tr><td>[1301, 1362]</td><td>9</td></tr><tr><td>(1362, 1423]</td><td>19</td></tr><tr><td>(1423, 1484]</td><td>40</td></tr><tr><td>(1484, 1545]</td><td>36</td></tr><tr><td>(1545, 1606]</td><td>77</td></tr><tr><td>(1606, 1667]</td><td>99</td></tr><tr><td>(1667, 1728]</td><td>121</td></tr><tr><td>(1728, 1789]</td><td>135</td></tr><tr><td>(1789, 1850]</td><td>114</td></tr><tr><td>(1850, 1911]</td><td>92</td></tr><tr><td>(1911, 1972]</td><td>82</td></tr><tr><td>(1972, 2033]</td><td>34</td></tr><tr><td>(2033, 2094]</td><td>14</td></tr><tr><td>(2094, 2155]</td><td>10</td></tr><tr><td>(2155, 2216]</td><td>7</td></tr></tbody></table> | Age Range | Frequency | [1301, 1362] | 9 | (1362, 1423] | 19 | (1423, 1484] | 40 | (1484, 1545] | 36 | (1545, 1606] | 77 | (1606, 1667] | 99 | (1667, 1728] | 121 | (1728, 1789] | 135 | (1789, 1850] | 114 | (1850, 1911] | 92 | (1911, 1972] | 82 | (1972, 2033] | 34 | (2033, 2094] | 14 | (2094, 2155] | 10 | (2155, 2216] | 7 |
| Age Range               | Frequency |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| [1301, 1362]            | 9         |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (1362, 1423]            | 19        |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (1423, 1484]            | 40        |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (1484, 1545]            | 36        |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (1545, 1606]            | 77        |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (1606, 1667]            | 99        |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (1667, 1728]            | 121       |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (1728, 1789]            | 135       |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (1789, 1850]            | 114       |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (1850, 1911]            | 92        |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (1911, 1972]            | 82        |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (1972, 2033]            | 34        |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (2033, 2094]            | 14        |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (2094, 2155]            | 10        |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (2155, 2216]            | 7         |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| Half Aunt/Uncle         | 80        | 540  | 863     | 1172 | <table><thead><tr><th>Age Range</th><th>Frequency</th></tr></thead><tbody><tr><td>[540, 660]</td><td>8</td></tr><tr><td>(660, 780]</td><td>18</td></tr><tr><td>(780, 900]</td><td>19</td></tr><tr><td>(900, 1020]</td><td>21</td></tr><tr><td>(1020, 1140]</td><td>12</td></tr><tr><td>(1140, 1260]</td><td>2</td></tr></tbody></table>  | Age Range | Frequency | [540, 660]   | 8 | (660, 780]   | 18 | (780, 900]   | 19 | (900, 1020]  | 21 | (1020, 1140] | 12 | (1140, 1260] | 2  |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| Age Range               | Frequency |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| [540, 660]              | 8         |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (660, 780]              | 18        |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (780, 900]              | 19        |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (900, 1020]             | 21        |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (1020, 1140]            | 12        |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |
| (1140, 1260]            | 2         |      |         |      |  |           |           |              |   |              |    |              |    |              |    |              |    |              |    |              |     |              |     |              |     |              |    |              |    |              |    |              |    |              |    |              |   |

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| Relationship     | #         | Min | Average | Max  | Histogram   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
|------------------|-----------|-----|---------|------|---|-----------|-----------|------------|----|------------|----|------------|----|------------|----|------------|----|-------------|-----|--------------|-----|------------|-----|-------------|----|--------------|----|--------------|----|--------------|----|--------------|----|--------------|---|--------------|---|--------------|---|
| Great Aunt/Uncle | 158       | 521 | 857     | 1138 | <table><thead><tr><th>Age Range</th><th>Frequency</th></tr></thead><tbody><tr><td>[521, 611]</td><td>8</td></tr><tr><td>(611, 701]</td><td>14</td></tr><tr><td>(701, 791]</td><td>23</td></tr><tr><td>(791, 881]</td><td>42</td></tr><tr><td>(881, 971]</td><td>35</td></tr><tr><td>(971, 1061]</td><td>28</td></tr><tr><td>(1061, 1151]</td><td>8</td></tr></tbody></table>  | Age Range | Frequency | [521, 611] | 8  | (611, 701] | 14 | (701, 791] | 23 | (791, 881] | 42 | (881, 971] | 35 | (971, 1061] | 28  | (1061, 1151] | 8   |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| Age Range        | Frequency |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| [521, 611]       | 8         |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (611, 701]       | 14        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (701, 791]       | 23        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (791, 881]       | 42        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (881, 971]       | 35        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (971, 1061]      | 28        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1061, 1151]     | 8         |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| 1C               | 869       | 533 | 869     | 1379 | <table><thead><tr><th>Age Range</th><th>Frequency</th></tr></thead><tbody><tr><td>[533, 586]</td><td>12</td></tr><tr><td>(586, 639]</td><td>29</td></tr><tr><td>(639, 692]</td><td>46</td></tr><tr><td>(692, 745]</td><td>76</td></tr><tr><td>(745, 798]</td><td>83</td></tr><tr><td>(798, 851]</td><td>133</td></tr><tr><td>(851, 904]</td><td>125</td></tr><tr><td>(904, 957]</td><td>111</td></tr><tr><td>(957, 1010]</td><td>94</td></tr><tr><td>(1010, 1063]</td><td>69</td></tr><tr><td>(1063, 1116]</td><td>47</td></tr><tr><td>(1116, 1169]</td><td>25</td></tr><tr><td>(1169, 1222]</td><td>10</td></tr><tr><td>(1222, 1275]</td><td>5</td></tr><tr><td>(1275, 1328]</td><td>2</td></tr><tr><td>(1328, 1381]</td><td>2</td></tr></tbody></table> | Age Range | Frequency | [533, 586] | 12 | (586, 639] | 29 | (639, 692] | 46 | (692, 745] | 76 | (745, 798] | 83 | (798, 851]  | 133 | (851, 904]   | 125 | (904, 957] | 111 | (957, 1010] | 94 | (1010, 1063] | 69 | (1063, 1116] | 47 | (1116, 1169] | 25 | (1169, 1222] | 10 | (1222, 1275] | 5 | (1275, 1328] | 2 | (1328, 1381] | 2 |
| Age Range        | Frequency |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| [533, 586]       | 12        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (586, 639]       | 29        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (639, 692]       | 46        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (692, 745]       | 76        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (745, 798]       | 83        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (798, 851]       | 133       |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (851, 904]       | 125       |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (904, 957]       | 111       |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (957, 1010]      | 94        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1010, 1063]     | 69        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1063, 1116]     | 47        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1116, 1169]     | 25        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1169, 1222]     | 10        |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1222, 1275]     | 5         |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1275, 1328]     | 2         |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |
| (1328, 1381]     | 2         |     |         |      |   |           |           |            |    |            |    |            |    |            |    |            |    |             |     |              |     |            |     |             |    |              |    |              |    |              |    |              |    |              |   |              |   |              |   |

The Shared CM Project – Version 2.0 (June 25, 2016)

| Relationship | #   | Min | Average | Max | Histogram |  |
|--------------|-----|-----|---------|-----|-----------|--|
| 1C1R         | 839 | 115 | 512     | 753 |           |  |
| 1C2R         | 193 | 27  | 235     | 413 |           |  |



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| Relationship  | #         | Min | Average | Max | Histogram  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
|---|-----------|-----|---------|-----|--|-----------|-----------|--------------|----|---------------|----|----------------|----|----------------|-----|----------------|-----|----------------|-----|----------------|-----|----------------|----|----------------|----|----------------|----|----------------|----|----------------|----|----------------|----|----------------|----|----------------|---|------------|---|
| 2C  | 867       | 43  | 238     | 504 | <table><caption>2C Histogram Data</caption><thead><tr><th>Bin Range</th><th>Frequency</th></tr></thead><tbody><tr><td>[42.9, 74.9]</td><td>8</td></tr><tr><td>(74.9, 106.9]</td><td>28</td></tr><tr><td>(106.9, 138.9]</td><td>54</td></tr><tr><td>(138.9, 170.9]</td><td>120</td></tr><tr><td>(170.9, 202.9]</td><td>117</td></tr><tr><td>(202.9, 234.9]</td><td>127</td></tr><tr><td>(234.9, 266.9]</td><td>134</td></tr><tr><td>(266.9, 298.9]</td><td>95</td></tr><tr><td>(298.9, 330.9]</td><td>50</td></tr><tr><td>(330.9, 362.9]</td><td>49</td></tr><tr><td>(362.9, 394.9]</td><td>25</td></tr><tr><td>(394.9, 426.9]</td><td>25</td></tr><tr><td>(426.9, 458.9]</td><td>17</td></tr><tr><td>(458.9, 490.9]</td><td>11</td></tr><tr><td>(490.9, 522.9]</td><td>7</td></tr></tbody></table> | Bin Range | Frequency | [42.9, 74.9] | 8  | (74.9, 106.9] | 28 | (106.9, 138.9] | 54 | (138.9, 170.9] | 120 | (170.9, 202.9] | 117 | (202.9, 234.9] | 127 | (234.9, 266.9] | 134 | (266.9, 298.9] | 95 | (298.9, 330.9] | 50 | (330.9, 362.9] | 49 | (362.9, 394.9] | 25 | (394.9, 426.9] | 25 | (426.9, 458.9] | 17 | (458.9, 490.9] | 11 | (490.9, 522.9] | 7 |            |   |
| Bin Range   | Frequency |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| [42.9, 74.9]  | 8         |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (74.9, 106.9]   | 28        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (106.9, 138.9]  | 54        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (138.9, 170.9]  | 120       |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (170.9, 202.9]  | 117       |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (202.9, 234.9]  | 127       |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (234.9, 266.9]  | 134       |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (266.9, 298.9]  | 95        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (298.9, 330.9]  | 50        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (330.9, 362.9]  | 49        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (362.9, 394.9]  | 25        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (394.9, 426.9]  | 25        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (426.9, 458.9]  | 17        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (458.9, 490.9]  | 11        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (490.9, 522.9]  | 7         |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| 2C1R<br>(the average was calculated only for those sharing DNA) | 884       | 0   | 129     | 325 | <table><caption>2C1R Histogram Data</caption><thead><tr><th>Bin Range</th><th>Frequency</th></tr></thead><tbody><tr><td>[0, 21]</td><td>10</td></tr><tr><td>(21, 42]</td><td>33</td></tr><tr><td>(42, 63]</td><td>50</td></tr><tr><td>(63, 84]</td><td>119</td></tr><tr><td>(84, 105]</td><td>136</td></tr><tr><td>(105, 126]</td><td>135</td></tr><tr><td>(126, 147]</td><td>143</td></tr><tr><td>(147, 168]</td><td>93</td></tr><tr><td>(168, 189]</td><td>78</td></tr><tr><td>(189, 210]</td><td>40</td></tr><tr><td>(210, 231]</td><td>40</td></tr><tr><td>(231, 252]</td><td>16</td></tr><tr><td>(252, 273]</td><td>14</td></tr><tr><td>(273, 294]</td><td>11</td></tr><tr><td>(294, 315]</td><td>4</td></tr><tr><td>(315, 336]</td><td>3</td></tr></tbody></table>                           | Bin Range | Frequency | [0, 21]      | 10 | (21, 42]      | 33 | (42, 63]       | 50 | (63, 84]       | 119 | (84, 105]      | 136 | (105, 126]     | 135 | (126, 147]     | 143 | (147, 168]     | 93 | (168, 189]     | 78 | (189, 210]     | 40 | (210, 231]     | 40 | (231, 252]     | 16 | (252, 273]     | 14 | (273, 294]     | 11 | (294, 315]     | 4 | (315, 336] | 3 |
| Bin Range   | Frequency |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| [0, 21]   | 10        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (21, 42]  | 33        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (42, 63]  | 50        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (63, 84]  | 119       |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (84, 105]   | 136       |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (105, 126]  | 135       |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (126, 147]  | 143       |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (147, 168]  | 93        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (168, 189]  | 78        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (189, 210]  | 40        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (210, 231]  | 40        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (231, 252]  | 16        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (252, 273]  | 14        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (273, 294]  | 11        |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (294, 315]  | 4         |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |
| (315, 336]  | 3         |     |         |     |  |           |           |              |    |               |    |                |    |                |     |                |     |                |     |                |     |                |    |                |    |                |    |                |    |                |    |                |    |                |    |                |   |            |   |

The Shared CM Project – Version 2.0 (June 25, 2016)

| Relationship  | #         | Min | Average | Max | Histogram   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
|---|-----------|-----|---------|-----|---|-----------|-----------|---------------|----|----------------|----|----------------|----|-----------------|----|------------------|-----|------------------|-----|------------------|----|------------------|----|------------|----|------------|----|------------|----|------------|----|------------|----|------------|---|
| 2C2R<br><br>(the average was calculated only for those sharing DNA) | 172       | 0   | 81      | 201 | <table><thead><tr><th>Bin Range</th><th>Frequency</th></tr></thead><tbody><tr><td>[0.00, 28.00]</td><td>18</td></tr><tr><td>(28.00, 56.00]</td><td>37</td></tr><tr><td>(56.00, 84.00]</td><td>40</td></tr><tr><td>(84.00, 112.00]</td><td>38</td></tr><tr><td>(112.00, 140.00]</td><td>21</td></tr><tr><td>(140.00, 168.00]</td><td>10</td></tr><tr><td>(168.00, 196.00]</td><td>6</td></tr><tr><td>(196.00, 224.00]</td><td>2</td></tr></tbody></table>  | Bin Range | Frequency | [0.00, 28.00] | 18 | (28.00, 56.00] | 37 | (56.00, 84.00] | 40 | (84.00, 112.00] | 38 | (112.00, 140.00] | 21  | (140.00, 168.00] | 10  | (168.00, 196.00] | 6  | (196.00, 224.00] | 2  |            |    |            |    |            |    |            |    |            |    |            |   |
| Bin Range   | Frequency |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| [0.00, 28.00]   | 18        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (28.00, 56.00]  | 37        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (56.00, 84.00]  | 40        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (84.00, 112.00]   | 38        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (112.00, 140.00]  | 21        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (140.00, 168.00]  | 10        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (168.00, 196.00]  | 6         |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (196.00, 224.00]  | 2         |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| 3C<br><br>(the average was calculated only for those sharing DNA)   | 794       | 0   | 79      | 198 | <table><thead><tr><th>Bin Range</th><th>Frequency</th></tr></thead><tbody><tr><td>[0, 15]</td><td>28</td></tr><tr><td>(15, 30]</td><td>57</td></tr><tr><td>(30, 45]</td><td>85</td></tr><tr><td>(45, 60]</td><td>91</td></tr><tr><td>(60, 75]</td><td>135</td></tr><tr><td>(75, 90]</td><td>130</td></tr><tr><td>(90, 105]</td><td>77</td></tr><tr><td>(105, 120]</td><td>78</td></tr><tr><td>(120, 135]</td><td>47</td></tr><tr><td>(135, 150]</td><td>24</td></tr><tr><td>(150, 165]</td><td>20</td></tr><tr><td>(165, 180]</td><td>11</td></tr><tr><td>(180, 195]</td><td>10</td></tr><tr><td>(195, 210]</td><td>1</td></tr></tbody></table> | Bin Range | Frequency | [0, 15]       | 28 | (15, 30]       | 57 | (30, 45]       | 85 | (45, 60]        | 91 | (60, 75]         | 135 | (75, 90]         | 130 | (90, 105]        | 77 | (105, 120]       | 78 | (120, 135] | 47 | (135, 150] | 24 | (150, 165] | 20 | (165, 180] | 11 | (180, 195] | 10 | (195, 210] | 1 |
| Bin Range   | Frequency |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| [0, 15]   | 28        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (15, 30]  | 57        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (30, 45]  | 85        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (45, 60]  | 91        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (60, 75]  | 135       |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (75, 90]  | 130       |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (90, 105]   | 77        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (105, 120]  | 78        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (120, 135]  | 47        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (135, 150]  | 24        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (150, 165]  | 20        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (165, 180]  | 11        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (180, 195]  | 10        |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |
| (195, 210]  | 1         |     |         |     |   |           |           |               |    |                |    |                |    |                 |    |                  |     |                  |     |                  |    |                  |    |            |    |            |    |            |    |            |    |            |    |            |   |

The Shared CM Project – Version 2.0 (June 25, 2016)

| Relationship  | #         | Min | Average | Max | Histogram  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
|---|-----------|-----|---------|-----|--|-------|-----------|---------------|----|----------------|----|----------------|----|----------------|----|----------------|----|----------------|----|----------------|----|-----------------|----|------------------|----|------------------|---|------------------|----|------------------|---|
| 3C1R<br><br>(the average was calculated only for those sharing DNA) | 547       | 0   | 56      | 156 | <table><thead><tr><th>Range</th><th>Frequency</th></tr></thead><tbody><tr><td>[0.00, 14.00]</td><td>43</td></tr><tr><td>(14.00, 28.00]</td><td>84</td></tr><tr><td>(28.00, 42.00]</td><td>93</td></tr><tr><td>(42.00, 56.00]</td><td>80</td></tr><tr><td>(56.00, 70.00]</td><td>76</td></tr><tr><td>(70.00, 84.00]</td><td>64</td></tr><tr><td>(84.00, 98.00]</td><td>46</td></tr><tr><td>(98.00, 112.00]</td><td>25</td></tr><tr><td>(112.00, 126.00]</td><td>15</td></tr><tr><td>(126.00, 140.00]</td><td>9</td></tr><tr><td>(140.00, 154.00]</td><td>11</td></tr><tr><td>(154.00, 168.00]</td><td>1</td></tr></tbody></table> | Range | Frequency | [0.00, 14.00] | 43 | (14.00, 28.00] | 84 | (28.00, 42.00] | 93 | (42.00, 56.00] | 80 | (56.00, 70.00] | 76 | (70.00, 84.00] | 64 | (84.00, 98.00] | 46 | (98.00, 112.00] | 25 | (112.00, 126.00] | 15 | (126.00, 140.00] | 9 | (140.00, 154.00] | 11 | (154.00, 168.00] | 1 |
| Range   | Frequency |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| [0.00, 14.00]   | 43        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (14.00, 28.00]  | 84        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (28.00, 42.00]  | 93        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (42.00, 56.00]  | 80        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (56.00, 70.00]  | 76        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (70.00, 84.00]  | 64        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (84.00, 98.00]  | 46        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (98.00, 112.00]   | 25        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (112.00, 126.00]  | 15        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (126.00, 140.00]  | 9         |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (140.00, 154.00]  | 11        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (154.00, 168.00]  | 1         |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| 3C2R<br><br>(the average was calculated only for those sharing DNA) | 114       | 0   | 36      | 82  | <table><thead><tr><th>Range</th><th>Frequency</th></tr></thead><tbody><tr><td>[0.00, 15.00]</td><td>22</td></tr><tr><td>(15.00, 30.00]</td><td>25</td></tr><tr><td>(30.00, 45.00]</td><td>32</td></tr><tr><td>(45.00, 60.00]</td><td>18</td></tr><tr><td>(60.00, 75.00]</td><td>15</td></tr><tr><td>(75.00, 90.00]</td><td>2</td></tr></tbody></table>   | Range | Frequency | [0.00, 15.00] | 22 | (15.00, 30.00] | 25 | (30.00, 45.00] | 32 | (45.00, 60.00] | 18 | (60.00, 75.00] | 15 | (75.00, 90.00] | 2  |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| Range   | Frequency |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| [0.00, 15.00]   | 22        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (15.00, 30.00]  | 25        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (30.00, 45.00]  | 32        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (45.00, 60.00]  | 18        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (60.00, 75.00]  | 15        |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |
| (75.00, 90.00]  | 2         |     |         |     |  |       |           |               |    |                |    |                |    |                |    |                |    |                |    |                |    |                 |    |                  |    |                  |   |                  |    |                  |   |

The Shared CM Project – Version 2.0 (June 25, 2016)

| Relationship  | #         | Min | Average | Max | Histogram   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
|---|-----------|-----|---------|-----|---|-----------|-----------|---------------|----|----------------|----|----------------|----|----------------|----|----------------|----|----------------|----|----------------|---|
| 4C<br>(the average was calculated only for those sharing DNA)   | 221       | 0   | 31      | 90  | <table><thead><tr><th>Bin Range</th><th>Frequency</th></tr></thead><tbody><tr><td>[0.00, 13.00]</td><td>54</td></tr><tr><td>[13.00, 26.00]</td><td>63</td></tr><tr><td>[26.00, 39.00]</td><td>47</td></tr><tr><td>[39.00, 52.00]</td><td>18</td></tr><tr><td>[52.00, 65.00]</td><td>19</td></tr><tr><td>[65.00, 78.00]</td><td>13</td></tr><tr><td>[78.00, 91.00]</td><td>7</td></tr></tbody></table> | Bin Range | Frequency | [0.00, 13.00] | 54 | [13.00, 26.00] | 63 | [26.00, 39.00] | 47 | [39.00, 52.00] | 18 | [52.00, 65.00] | 19 | [65.00, 78.00] | 13 | [78.00, 91.00] | 7 |
| Bin Range   | Frequency |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| [0.00, 13.00]   | 54        |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| [13.00, 26.00]  | 63        |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| [26.00, 39.00]  | 47        |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| [39.00, 52.00]  | 18        |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| [52.00, 65.00]  | 19        |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| [65.00, 78.00]  | 13        |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| [78.00, 91.00]  | 7         |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| 4C1R<br>(the average was calculated only for those sharing DNA) | 164       | 0   | 20      | 57  | <table><thead><tr><th>Bin Range</th><th>Frequency</th></tr></thead><tbody><tr><td>[0.00, 9.30]</td><td>55</td></tr><tr><td>[9.30, 18.60]</td><td>35</td></tr><tr><td>[18.60, 27.90]</td><td>32</td></tr><tr><td>[27.90, 37.20]</td><td>21</td></tr><tr><td>[37.20, 46.50]</td><td>8</td></tr><tr><td>[46.50, 55.80]</td><td>9</td></tr><tr><td>[55.80, 65.10]</td><td>4</td></tr></tbody></table>     | Bin Range | Frequency | [0.00, 9.30]  | 55 | [9.30, 18.60]  | 35 | [18.60, 27.90] | 32 | [27.90, 37.20] | 21 | [37.20, 46.50] | 8  | [46.50, 55.80] | 9  | [55.80, 65.10] | 4 |
| Bin Range   | Frequency |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| [0.00, 9.30]  | 55        |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| [9.30, 18.60]   | 35        |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| [18.60, 27.90]  | 32        |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| [27.90, 37.20]  | 21        |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| [37.20, 46.50]  | 8         |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| [46.50, 55.80]  | 9         |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |
| [55.80, 65.10]  | 4         |     |         |     |   |           |           |               |    |                |    |                |    |                |    |                |    |                |    |                |   |

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Due to the low number of data entries for the following, histograms were not created:

| Relationship                 | #  | Min | Average | Max  |
|------------------------------|----|-----|---------|------|
| Great Grandparent/Grandchild | 29 | 547 | 850     | 1110 |
| Great Great Aunt/Uncle       | 6  | 214 | 434     | 580  |
| Half 1C                      | 23 | 236 | 554     | 704  |
| Half 1C1R                    | 32 | 78  | 187     | 253  |
| Half 2C                      | 51 | 0   | 123     | 245  |
| Half 2C1R                    | 40 | 0   | 73      | 196  |
| 4C2R                         | 34 | 0   | 14      | 27   |
| 5C                           | 99 | 0   | 17      | 42   |
| 5C1R                         | 82 | 0   | 14      | 41   |
| 5C2R                         | 25 | 0   | 16      | 41   |
| 6C                           | 38 | 0   | 9       | 21   |
| 6C1R                         | 46 | 0   | 9       | 19   |
| 6C2R                         | 20 | 0   | 11      | 29   |
| 7C                           | 19 | 0   | 7       | 10   |
| 7C1R                         | 42 | 0   | 7       | 14   |
| 8C                           | 25 | 0   | 9       | 16   |

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Blaine T. Bettinger

| Relationship                 | #   | Min  | Average | Max  |
|------------------------------|-----|------|---------|------|
| Parent/Child                 | 758 | 3266 | 3471    | 3720 |
| Siblings                     | 789 | 2150 | 2600    | 3070 |
| Half Siblings                | 187 | 1320 | 1753    | 2134 |
| Grandparent/Grandchild       | 281 | 1272 | 1765    | 2365 |
| Great Grandparent/Grandchild | 29  | 547  | 850     | 1110 |
| Aunt/Uncle/Niece/Nephew      | 889 | 1301 | 1744    | 2193 |
| Half Aunt/Uncle              | 80  | 540  | 863     | 1172 |
| Great Aunt/Uncle             | 158 | 521  | 857     | 1138 |
| Great Great Aunt/Uncle       | 6   | 214  | 434     | 580  |
| 1C                           | 869 | 533  | 869     | 1379 |
| Half 1C                      | 23  | 236  | 554     | 704  |
| 1C1R                         | 839 | 115  | 512     | 753  |
| Half 1C1R                    | 32  | 78   | 187     | 253  |
| 1C2R                         | 193 | 27   | 235     | 413  |
| 2C                           | 867 | 43   | 238     | 504  |
| Half 2C                      | 51  | 0    | 123     | 245  |
| 2C1R                         | 884 | 0    | 129     | 325  |
| Half 2C1R                    | 40  | 0    | 73      | 196  |
| 2C2R                         | 172 | 0    | 81      | 201  |
| 3C                           | 794 | 0    | 79      | 198  |
| 3C1R                         | 547 | 0    | 56      | 156  |
| 3C2R                         | 114 | 0    | 36      | 82   |
| 4C                           | 221 | 0    | 31      | 90   |
| 4C1R                         | 164 | 0    | 20      | 57   |
| 4C2R                         | 34  | 0    | 14      | 27   |
| 5C                           | 99  | 0    | 17      | 42   |
| 5C1R                         | 82  | 0    | 14      | 41   |
| 5C2R                         | 25  | 0    | 16      | 41   |
| 6C                           | 38  | 0    | 9       | 21   |
| 6C1R                         | 46  | 0    | 9       | 19   |
| 6C2R                         | 20  | 0    | 11      | 29   |
| 7C                           | 19  | 0    | 7       | 10   |
| 7C1R                         | 42  | 0    | 7       | 14   |
| 8C                           | 25  | 0    | 9       | 16   |