Supporting Information:

1. Effect of reducing agent – Ge NCs prepared by reduction of GeI₂ in the presence of LiAlH₄.

**Figure S1**: Ge NCs synthesized with LiAlH₄ as a reducing agent. A) TEM images Ge NCs grown in pure TOP at 300 °C for 1 hr using LiAlH₄ B) XRD corresponding to TEM images in A) of a synthesis yielding crystalline products (bottom) and of a synthesis run at the same conditions yielding primarily amorphous products (top).
2. XRD peak width analysis using Scherrer’s equation.

\[ \tau = \frac{K\lambda}{\beta \cos \theta} \]

\( \lambda = 0.154\text{nm} \quad K = 0.93 \)

<table>
<thead>
<tr>
<th>Time</th>
<th>FWHM [degree]</th>
<th>Peak [degree]</th>
<th>Grain size [nm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 min</td>
<td>2.35</td>
<td>45.4</td>
<td>3.83</td>
</tr>
<tr>
<td>60 min</td>
<td>2.26</td>
<td>45.4</td>
<td>3.98</td>
</tr>
<tr>
<td>120 min</td>
<td>0.82</td>
<td>45.4</td>
<td>11.0</td>
</tr>
</tbody>
</table>

**Figure S2**: Scherrer peak width analysis of Ge NC XRD patterns
3. TEM images of Ge NC used for statistical analysis of NC diameters.

**Figure S3**: TEM images of Ge NCs synthesized in the presence of HDA and TOP at 300°C reacted for 1 hour in the presence of various ratios of $\phi = \text{t-butLi:GeI}_2$. 