TABLE 1. Variable Definition and Descriptive Statistics (N = 2,801)

<table>
<thead>
<tr>
<th>High school attributes</th>
<th>Mean</th>
<th>S. D.</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student enrollment</td>
<td>1,906.942</td>
<td>659.584</td>
<td>101.00</td>
<td>3,509.00</td>
</tr>
<tr>
<td>Expenditure per student (constant $2005)</td>
<td>5,419.353</td>
<td>1,161.438</td>
<td>1,119.63</td>
<td>11,899.05</td>
</tr>
<tr>
<td>Percent of not highly qualified teachers</td>
<td>19.944</td>
<td>15.354</td>
<td>0.00</td>
<td>70.40</td>
</tr>
<tr>
<td>Student dropout rate (%)</td>
<td>2.992</td>
<td>2.223</td>
<td>0.00</td>
<td>13.10</td>
</tr>
<tr>
<td>Annual number of violent, weapons, and drug incidents (per 100 students)</td>
<td>4.261</td>
<td>2.147</td>
<td>0.00</td>
<td>14.21</td>
</tr>
<tr>
<td>Percent of non-Asian minority student enrollment</td>
<td>23.949</td>
<td>13.138</td>
<td>6.10</td>
<td>74.00</td>
</tr>
<tr>
<td>Average class size</td>
<td>25.788</td>
<td>3.328</td>
<td>5.60</td>
<td>33.10</td>
</tr>
<tr>
<td>Percent of Asian American student enrollment</td>
<td>6.622</td>
<td>3.946</td>
<td>0.20</td>
<td>74.00</td>
</tr>
<tr>
<td>Percent of students with limited English proficiency</td>
<td>14.323</td>
<td>9.038</td>
<td>2.40</td>
<td>61.00</td>
</tr>
<tr>
<td>Urban location</td>
<td>0.820</td>
<td>0.384</td>
<td>0</td>
<td>1</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Individual student attributes: demographics and precollegiate</th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>0.437</td>
<td>0.496</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Ethnicity/race unknown</td>
<td>0.124</td>
<td>0.330</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Black, Hispanic, or Native American</td>
<td>0.106</td>
<td>0.307</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Asian American</td>
<td>0.075</td>
<td>0.264</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Parent income unknown</td>
<td>0.322</td>
<td>0.467</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Parent income less than $30K</td>
<td>0.096</td>
<td>0.295</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Parent income $30-50K</td>
<td>0.124</td>
<td>0.329</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Parent income $50-80K</td>
<td>0.192</td>
<td>0.394</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Residency outside local five county area (approx. 70 mi radius)</td>
<td>0.303</td>
<td>0.460</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Academic preparation index</td>
<td>59.646</td>
<td>7.986</td>
<td>39.76</td>
<td>96.85</td>
</tr>
<tr>
<td>Advanced placement (AP) credits</td>
<td>2.550</td>
<td>5.109</td>
<td>0</td>
<td>51</td>
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<tr>
<td>Took ACT/SAT test as high school junior (instead of senior year)</td>
<td>0.392</td>
<td>0.488</td>
<td>0</td>
<td>1</td>
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</table>

<table>
<thead>
<tr>
<th>First-year college experience</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Second-year retention</td>
<td>0.844</td>
<td>0.363</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>First-year cumulative GPA (x10)</td>
<td>28.678</td>
<td>8.229</td>
<td>0.00</td>
<td>40.00</td>
</tr>
<tr>
<td>Average grade awarded in classes taken</td>
<td>2.540</td>
<td>0.288</td>
<td>0.75</td>
<td>3.75</td>
</tr>
<tr>
<td>Received one class grade of I, W, D, or F</td>
<td>0.112</td>
<td>0.315</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Received two or more class grades of I, W, D, or F</td>
<td>0.177</td>
<td>0.382</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Took one science-based course</td>
<td>0.275</td>
<td>0.446</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Took two science-based courses</td>
<td>0.204</td>
<td>0.403</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Took more than two science-based courses</td>
<td>0.284</td>
<td>0.451</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Percent of courses taught by adjunct/non-regular faculty members</td>
<td>40.558</td>
<td>17.992</td>
<td>0.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Percent of non-Asian ethnic/racial minority classmates</td>
<td>11.355</td>
<td>2.291</td>
<td>3.88</td>
<td>25.78</td>
</tr>
<tr>
<td>Percent of Asian ethnic/racial minority classmates</td>
<td>6.696</td>
<td>2.229</td>
<td>0.00</td>
<td>20.30</td>
</tr>
<tr>
<td>Percent of non-resident foreign classmates</td>
<td>1.686</td>
<td>0.862</td>
<td>0.00</td>
<td>12.16</td>
</tr>
<tr>
<td>Took at least one diversity course</td>
<td>0.183</td>
<td>0.386</td>
<td>0</td>
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<tr>
<td>Took 15 or more credits in first semester (instead of less)</td>
<td>0.531</td>
<td>0.499</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Transferred credits during the first year</td>
<td>0.283</td>
<td>0.451</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Retook a course</td>
<td>0.225</td>
<td>0.418</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Declared academic program major (instead of undeclared)</td>
<td>0.676</td>
<td>0.468</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Average room size of classes taken (hundreds of sq ft)</td>
<td>14.781</td>
<td>3.727</td>
<td>5.94</td>
<td>32.22</td>
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<tr>
<td>Lived on campus</td>
<td>0.454</td>
<td>0.498</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Was employed on campus</td>
<td>0.126</td>
<td>0.331</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Used on-campus recreation facilities</td>
<td>0.479</td>
<td>0.500</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>First-year college financial aid</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Received grant and/or scholarship (no loan)</td>
<td>0.578</td>
<td>0.494</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Received state-funded scholarship only</td>
<td>0.150</td>
<td>0.357</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Received aid package with loan(s)</td>
<td>0.172</td>
<td>0.378</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Financial need after all aid received and the EFC ($1K)</td>
<td>1.374</td>
<td>2.941</td>
<td>0.00</td>
<td>17.38</td>
</tr>
<tr>
<td>Low-income federal grants ($1K)</td>
<td>0.245</td>
<td>0.897</td>
<td>0.00</td>
<td>9.04</td>
</tr>
<tr>
<td>Low-income state grants ($1K)</td>
<td>0.054</td>
<td>0.255</td>
<td>0.00</td>
<td>1.72</td>
</tr>
<tr>
<td>Low-income institutional grants ($1K)</td>
<td>0.125</td>
<td>0.459</td>
<td>0.00</td>
<td>2.50</td>
</tr>
<tr>
<td>Other grants ($1K)</td>
<td>0.172</td>
<td>0.701</td>
<td>0.00</td>
<td>7.41</td>
</tr>
<tr>
<td>Other merit-based aid ($1K)</td>
<td>1.012</td>
<td>1.585</td>
<td>0.00</td>
<td>18.00</td>
</tr>
<tr>
<td>State-funded scholarship ($1K)</td>
<td>1.609</td>
<td>0.854</td>
<td>0.00</td>
<td>3.77</td>
</tr>
<tr>
<td>Unsubsidized loans ($1K)</td>
<td>0.485</td>
<td>1.897</td>
<td>0.00</td>
<td>17.18</td>
</tr>
<tr>
<td>Subsidized loans ($1K)</td>
<td>0.267</td>
<td>0.809</td>
<td>0.00</td>
<td>4.84</td>
</tr>
</tbody>
</table>

Reference group: "White," "Parent income over $80K," "Received no such grades;" "Took no such course" "Received no aid;"
TABLE 2. Parameter Estimates of Academic Preparation

<table>
<thead>
<tr>
<th>High school attributes</th>
<th>Advanced Placement (AP) Credits</th>
<th>Preparation Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimate</td>
<td>S. E.</td>
</tr>
<tr>
<td>Intercept</td>
<td>2.618</td>
<td>0.257</td>
</tr>
<tr>
<td>Student enrollment (increments of 100)</td>
<td>-0.023</td>
<td>0.051</td>
</tr>
<tr>
<td>Expenditure per student (increments of $100)</td>
<td>-0.027</td>
<td>0.019</td>
</tr>
<tr>
<td>Percent of not highly qualified teachers</td>
<td>-0.014</td>
<td>0.010</td>
</tr>
<tr>
<td>Student dropout rate (%)</td>
<td>0.067</td>
<td>0.093</td>
</tr>
<tr>
<td>Violent, weapons, and drug incidents (per 100 students)</td>
<td>0.001</td>
<td>0.068</td>
</tr>
<tr>
<td>Percent of non-Asian minority student enrollment</td>
<td>-0.031</td>
<td>0.019</td>
</tr>
<tr>
<td>Average class size (increments of 5)</td>
<td>-0.036</td>
<td>0.387</td>
</tr>
<tr>
<td>Percent of Asian American student enrollment</td>
<td>0.182</td>
<td>0.049</td>
</tr>
<tr>
<td>Percent of students with limited English proficiency</td>
<td>0.043</td>
<td>0.018</td>
</tr>
<tr>
<td>Rural location</td>
<td>-1.055</td>
<td>0.622</td>
</tr>
</tbody>
</table>

*Reference category: urban location; *** p ≤ .001; ** p ≤ .01; * p ≤ .05

TABLE 3. Parameter Estimates of Academic Preparation and First-Year GPA

<table>
<thead>
<tr>
<th>Individual student attributes</th>
<th>Preparation Index</th>
<th>First-Year GPA (x10)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimate</td>
<td>Std. Error</td>
</tr>
<tr>
<td>Intercept</td>
<td>63.1579</td>
<td>0.4807</td>
</tr>
<tr>
<td>Female</td>
<td>-0.1259</td>
<td>0.3058</td>
</tr>
<tr>
<td>Took ACT/SAT test as high school senior</td>
<td>-3.1249</td>
<td>0.3140</td>
</tr>
<tr>
<td>Ethnicity/race unknown</td>
<td>-0.2277</td>
<td>0.4628</td>
</tr>
<tr>
<td>Black, Hispanic, or Native American</td>
<td>-2.4564</td>
<td>0.4978</td>
</tr>
<tr>
<td>Asian American</td>
<td>1.1059</td>
<td>0.5832</td>
</tr>
<tr>
<td>Parent income unknown</td>
<td>-2.6758</td>
<td>0.3969</td>
</tr>
<tr>
<td>Parent income less than $30K</td>
<td>-1.8205</td>
<td>0.5732</td>
</tr>
<tr>
<td>Parent income $30-50K</td>
<td>-1.1538</td>
<td>0.5216</td>
</tr>
<tr>
<td>Parent income $50-80K</td>
<td>-1.0451</td>
<td>0.4492</td>
</tr>
<tr>
<td>Academic preparation index</td>
<td>0.5382</td>
<td>0.0175</td>
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</table>

<table>
<thead>
<tr>
<th>High school attributes</th>
<th>Preparation Index</th>
<th>First-Year GPA (x10)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimate</td>
<td>Std. Error</td>
</tr>
<tr>
<td>Rural location</td>
<td>0.1498</td>
<td>0.8188</td>
</tr>
<tr>
<td>Student enrollment (increments of 100)</td>
<td>0.0040</td>
<td>0.0684</td>
</tr>
<tr>
<td>Expenditure per student (increments of $100)</td>
<td>-0.0120</td>
<td>0.0294</td>
</tr>
<tr>
<td>Percent of not highly qualified teachers</td>
<td>-0.0078</td>
<td>0.0166</td>
</tr>
<tr>
<td>Student dropout rate (%)</td>
<td>0.0861</td>
<td>0.1372</td>
</tr>
<tr>
<td>Number of violent, weapons, and drug incidents</td>
<td>0.0056</td>
<td>0.0055</td>
</tr>
<tr>
<td>Percent of non-Asian minority student enrollment</td>
<td>-0.0262</td>
<td>0.0266</td>
</tr>
<tr>
<td>Average class size (increments of 5)</td>
<td>-0.6808</td>
<td>0.5513</td>
</tr>
<tr>
<td>Percent of Asian American student enrollment</td>
<td>0.0744</td>
<td>0.0649</td>
</tr>
<tr>
<td>Percent of students with limited English proficiency</td>
<td>0.0243</td>
<td>0.0285</td>
</tr>
</tbody>
</table>

*Reference category: listed in Table 1; N = 2,632; *** p ≤ .001; ** p ≤ .01; * p ≤ .05

Note: Student residential location excluded due to collinearity with high school location variable
### TABLE 4. Significant Student-Secondary School Attribute Interactions to Estimate First-Year College GPA (x10)

<table>
<thead>
<tr>
<th>Interaction terms</th>
<th>Estimate</th>
<th>Std. Error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent income less than $30K with % of HS non-Asian minority enrollment</td>
<td>-0.0791</td>
<td>0.0346</td>
<td>*</td>
</tr>
<tr>
<td>Parent income less than $30K with % of HS students with limited English proficiency</td>
<td>-0.1580</td>
<td>0.0463</td>
<td>***</td>
</tr>
<tr>
<td>Parent income less than $30K with HS number of violent, weapons, and drug incidents</td>
<td>-0.4988</td>
<td>0.2211</td>
<td>*</td>
</tr>
<tr>
<td>Asian American with HS expenditure per student (increments of $100)</td>
<td>0.1199</td>
<td>0.0573</td>
<td>*</td>
</tr>
</tbody>
</table>

*Reference category: listed in Table 1; *** p ≤ .001; ** p ≤ .01; * p ≤ .05

### TABLE 5. Parameter Estimates of First-Year GPA: Extended Model

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>S.E.</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
<th>VIF</th>
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</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>7.987</td>
<td>1.897</td>
<td>4.21</td>
<td>***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Individual student attributes</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>-0.916</td>
<td>0.229</td>
<td>-0.056</td>
<td>-4.01</td>
<td>***</td>
<td>1.186</td>
</tr>
<tr>
<td>Ethnicity/race unknown</td>
<td>-0.275</td>
<td>0.325</td>
<td>-0.011</td>
<td>-0.85</td>
<td>1.049</td>
<td></td>
</tr>
<tr>
<td>Black, Hispanic, or Native American</td>
<td>-0.345</td>
<td>0.375</td>
<td>-0.013</td>
<td>-0.92</td>
<td>1.303</td>
<td></td>
</tr>
<tr>
<td>Asian American</td>
<td>-0.379</td>
<td>0.449</td>
<td>-0.012</td>
<td>-0.84</td>
<td>1.254</td>
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<tr>
<td>Parent income unknown</td>
<td>0.329</td>
<td>0.287</td>
<td>0.019</td>
<td>1.14</td>
<td>1.648</td>
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</tr>
<tr>
<td>Parent income less than $30K</td>
<td>0.158</td>
<td>0.442</td>
<td>0.006</td>
<td>0.36</td>
<td>1.618</td>
<td></td>
</tr>
<tr>
<td>Parent income $30-50K</td>
<td>0.375</td>
<td>0.401</td>
<td>0.015</td>
<td>0.94</td>
<td>1.630</td>
<td></td>
</tr>
<tr>
<td>Parent income $50-80K</td>
<td>0.302</td>
<td>0.320</td>
<td>0.015</td>
<td>0.94</td>
<td>1.493</td>
<td></td>
</tr>
<tr>
<td>Took ACT/SAT test as high school junior</td>
<td>0.009</td>
<td>0.222</td>
<td>0.001</td>
<td>0.04</td>
<td>1.085</td>
<td></td>
</tr>
<tr>
<td>Academic preparation index</td>
<td>0.315</td>
<td>0.022</td>
<td>0.304</td>
<td>14.35</td>
<td>***</td>
<td>2.764</td>
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<tr>
<td>Residency outside local area (approx. 70 mi radius)</td>
<td>0.002</td>
<td>0.265</td>
<td>0.000</td>
<td>0.01</td>
<td>1.444</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Freshmen experience</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average grade awarded in classes taken</td>
<td>2.625</td>
<td>0.379</td>
<td>-0.093</td>
<td>6.66</td>
<td>***</td>
<td>1.187</td>
</tr>
<tr>
<td>Took 15 or more credits in first semester</td>
<td>0.799</td>
<td>0.218</td>
<td>0.049</td>
<td>3.67</td>
<td>***</td>
<td>1.097</td>
</tr>
<tr>
<td>Lived on campus</td>
<td>0.070</td>
<td>0.267</td>
<td>0.004</td>
<td>0.26</td>
<td>1.642</td>
<td></td>
</tr>
<tr>
<td>Was employed on campus</td>
<td>1.170</td>
<td>0.321</td>
<td>0.048</td>
<td>3.64</td>
<td>***</td>
<td>1.061</td>
</tr>
<tr>
<td>Financial need after EFC and all aid received ($1K)</td>
<td>-0.056</td>
<td>0.044</td>
<td>-0.020</td>
<td>-1.27</td>
<td>1.592</td>
<td></td>
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<tr>
<td>Received grant and/or scholarship (no loan)</td>
<td>0.955</td>
<td>0.381</td>
<td>0.058</td>
<td>2.50</td>
<td>**</td>
<td>3.262</td>
</tr>
<tr>
<td>Received state-funded scholarship only</td>
<td>0.625</td>
<td>0.461</td>
<td>0.027</td>
<td>1.35</td>
<td>2.453</td>
<td></td>
</tr>
<tr>
<td>Received aid package with loan(s)</td>
<td>-0.206</td>
<td>0.461</td>
<td>-0.010</td>
<td>-0.45</td>
<td>2.918</td>
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<tr>
<td>Declared academic program major</td>
<td>-0.400</td>
<td>0.231</td>
<td>-0.023</td>
<td>-1.73</td>
<td>1.070</td>
<td></td>
</tr>
<tr>
<td>Used recreation facilities</td>
<td>0.326</td>
<td>0.234</td>
<td>0.020</td>
<td>1.39</td>
<td>1.270</td>
<td></td>
</tr>
<tr>
<td>Average room size of classes taken (hundreds of sq ft)</td>
<td>0.010</td>
<td>0.031</td>
<td>0.005</td>
<td>0.31</td>
<td>1.285</td>
<td></td>
</tr>
<tr>
<td>Transferred credits during the first year</td>
<td>-0.212</td>
<td>0.279</td>
<td>-0.012</td>
<td>-0.76</td>
<td>1.430</td>
<td></td>
</tr>
<tr>
<td>Remedial freshmen passed first-year math ‘C’ or higher</td>
<td>-0.580</td>
<td>0.354</td>
<td>0.026</td>
<td>1.64</td>
<td>1.589</td>
<td></td>
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<tr>
<td>Remedial freshmen failed to receive ‘C’ in first-year math</td>
<td>-4.201</td>
<td>0.373</td>
<td>-1.191</td>
<td>-11.25</td>
<td>***</td>
<td>1.766</td>
</tr>
<tr>
<td>Passed second-year math course with at least a ‘B’</td>
<td>1.901</td>
<td>0.331</td>
<td>0.092</td>
<td>5.74</td>
<td>***</td>
<td>1.570</td>
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<tr>
<td>Received &lt; ‘B’ in second-year math</td>
<td>-3.717</td>
<td>0.415</td>
<td>-0.126</td>
<td>-8.95</td>
<td>***</td>
<td>1.211</td>
</tr>
<tr>
<td>Received Incomplete/Withdrawal grade in math</td>
<td>-5.810</td>
<td>0.482</td>
<td>-0.167</td>
<td>-12.05</td>
<td>***</td>
<td>1.179</td>
</tr>
<tr>
<td>Regular freshmen with &lt; ‘B’ in second-semester English</td>
<td>-6.687</td>
<td>0.377</td>
<td>-0.257</td>
<td>-18.25</td>
<td>***</td>
<td>1.216</td>
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<tr>
<td>Regular freshmen took first-semester English only</td>
<td>-5.860</td>
<td>0.439</td>
<td>-0.185</td>
<td>-13.35</td>
<td>***</td>
<td>1.181</td>
</tr>
<tr>
<td>Remedial freshmen took second-semester English</td>
<td>-1.008</td>
<td>0.423</td>
<td>-0.034</td>
<td>-2.38</td>
<td>*</td>
<td>1.282</td>
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<td>Remedial fresh. took first-semester English ‘B’ + grade</td>
<td>-0.461</td>
<td>0.371</td>
<td>-0.020</td>
<td>-1.24</td>
<td>1.554</td>
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<tr>
<td>Took no English or only English transfer credits</td>
<td>-2.906</td>
<td>0.377</td>
<td>-0.109</td>
<td>-7.71</td>
<td>***</td>
<td>1.224</td>
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<tr>
<td>Remedial freshmen &lt; ‘B’ in first-sem English or I/W grade</td>
<td>-8.162</td>
<td>0.510</td>
<td>-0.238</td>
<td>-16.01</td>
<td>***</td>
<td>1.356</td>
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<tr>
<td>Took one science-based course</td>
<td>-1.122</td>
<td>0.303</td>
<td>-0.006</td>
<td>-0.37</td>
<td>1.684</td>
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</tr>
<tr>
<td>Took two science-based courses</td>
<td>-1.851</td>
<td>0.347</td>
<td>-0.042</td>
<td>-2.45</td>
<td>*</td>
<td>1.814</td>
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<tr>
<td>Took three or more science-based courses</td>
<td>-1.749</td>
<td>0.384</td>
<td>-0.097</td>
<td>-4.55</td>
<td>***</td>
<td>2.769</td>
</tr>
<tr>
<td>First-year diversity experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of non-Asian ethnic/racial minority classmates</td>
<td>-0.157</td>
<td>0.054</td>
<td>-0.044</td>
<td>-2.93</td>
<td>**</td>
<td>1.384</td>
</tr>
<tr>
<td>Percent of Asian ethnic/racial minority classmates</td>
<td>0.033</td>
<td>0.060</td>
<td>0.009</td>
<td>0.55</td>
<td>1.647</td>
<td></td>
</tr>
<tr>
<td>Percent of non-resident foreign classmates</td>
<td>-0.253</td>
<td>0.129</td>
<td>-0.027</td>
<td>-1.96</td>
<td>.051</td>
<td>1.142</td>
</tr>
<tr>
<td>Took a diversity course</td>
<td>0.559</td>
<td>0.277</td>
<td>0.027</td>
<td>2.02</td>
<td>*</td>
<td>1.075</td>
</tr>
</tbody>
</table>

*Reference category: White; †greater than $80K; ‡received no aid; §undeclared; ¶Regular freshmen with ‘C+’ in first-year math; ¶¶Regular freshmen with ‘B+’ in second-semester English; ¶¶¶Took no such course. Note: First-year GPA multiplied by 10 to ease interpretation of effect size.

Model summary: Adjusted $R^2 = .544; *** p ≤ .001; ** p ≤ .01; * p ≤ .05

GAUGING EFFECTS ON FIRST-YEAR STUDENTS
TABLE 6. Parameter Estimates of Second-Year Enrollment Persistence

<table>
<thead>
<tr>
<th>Estimate</th>
<th>S.E.</th>
<th>Sig.</th>
<th>Δ - p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-0.723</td>
<td>0.532</td>
<td>1.517</td>
</tr>
</tbody>
</table>

**Individual student attributes**

- **Female**
  - 0.093 0.112 * -0.44% 0.906
- **Ethnicity/race unknown**
  - -0.310 0.157 * -4.17% -0.216 0.131 **
- **Black, Hispanic, or Native American**
  - -0.017 0.171 0.128 0.191
- **Asian American**
  - 0.542 0.261 0.560 0.283 * 7.53%
- **Parent income unknown**
  - -0.310 0.157 * -4.17% -0.216 0.131 **
- **Parent income less than $30K**
  - 0.120 0.203 0.208 0.248
- **Parent income $30-50K**
  - -0.094 0.194 0.280 0.241
- **Parent income $50-80K**
  - -0.100 0.194 0.208 0.241
- **Took ACT/SAT test as high school senior**
  - -0.100 0.194 0.208 0.241
- **Academic preparation index**
  - 0.542 0.148 0.560 0.283 * 7.53%
- **Residency outside local five county area (approx. 70 mi radius)**
  - -0.767 0.151 *** -10.31%

**Freshmen experience**

- **Percent of courses taught by adjunct/non-regular faculty members**
  - -0.008 0.003 * -0.10% 0.003 0.004
- **First-year cumulative GPA (x10)**
  - 0.104 0.009 *** 1.39%
- **Average grade awarded in classes taken**
  - 0.194 0.225 *** 5.75%
- **Took 15 or more credits in first semester**
  - 0.428 0.126 *** 5.75%
- **Lived on campus**
  - 0.075 0.156
- **Was employed on campus**
  - 0.310 0.207
- **Financial need after EFC and all aid received ($1K)**
  - -0.022 0.024
- **Received grant and/or scholarship (no loan)**
  - 0.025 0.024
- **Received state-funded scholarship only**
  - -0.180 0.249
- **Received aid package with loan(s)**
  - -0.399 0.254
- **Declared academic program major**
  - 0.113 0.130
- **Used recreation facilities**
  - 0.153 0.135
- **Average room size of classes taken (hundreds of sq ft)**
  - -0.022 0.017
- **Transferred credits during the first year**
  - 0.293 0.175
- **Received one class grade of I, W, D, or F**
  - 0.449 0.173 ** -6.04%
- **Received two or more class grades of I, W, D, or F**
  - -0.354 0.184 0.0549 -4.75%
- **Took one science-based course**
  - 0.281 0.162
- **Took two science-based courses**
  - 0.356 0.186 0.0557 4.79%
- **Took three or more science-based courses**
  - 0.486 0.203 0.63%

**Note:** Each model includes all variables listed in Table 6.

First-Year experience model summary: Nagelkerke R² = .26; Hosmer-Lemeshow sig. > .05; Correct classification rate = 76.2% yes, 66.7% no


<table>
<thead>
<tr>
<th>Estimate</th>
<th>S.E.</th>
<th>Sig.</th>
<th>Estimate</th>
<th>S.E.</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.817</td>
<td>0.430</td>
<td>***</td>
<td>1.115</td>
<td>1.042</td>
</tr>
</tbody>
</table>

**First-year diversity experience**

- **Percent of non-Asian ethnic/racial minority classmates**
  - -0.010 0.027 0.720 0.028 0.032 0.377
- **Percent of Asian ethnic/racial minority classmates**
  - 0.029 0.030 0.339 -0.027 0.036 0.452
- **Percent of non-resident foreign classmates**
  - 0.018 0.067 0.794 0.115 0.083 0.166
- **Took a diversity course**
  - 0.216 0.148 0.145 0.169 0.164 0.303

**Note:** Each model includes all variables listed in Table 6.
## TABLE 8. Parameter Estimates of Second-Year Persistence: Significant Interaction Effects

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>S.E.</th>
<th>Exp(B)</th>
<th>Sig.</th>
<th>% Δ - p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model fit: $X^2$ difference significant at 0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Residency outside local five county area (approx. 70 mi radius)</td>
<td>-0.799</td>
<td>0.152</td>
<td>0.450</td>
<td>***</td>
<td>-10.73</td>
</tr>
<tr>
<td>(2) Percent of non-Asian ethnic/racial minority classmates</td>
<td>0.065</td>
<td>0.038</td>
<td>1.068</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction (1) x (2)</td>
<td>-0.115</td>
<td>0.058</td>
<td>0.891</td>
<td>*</td>
<td>-12.28</td>
</tr>
<tr>
<td>Intercept</td>
<td>2.028</td>
<td>0.726</td>
<td></td>
<td>**</td>
<td></td>
</tr>
<tr>
<td><strong>B</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model fit: $X^2$ difference significant at 0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1a) Ethnicity/race unknown</td>
<td>-0.192</td>
<td>0.176</td>
<td>0.826</td>
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<td></td>
</tr>
<tr>
<td>(1b) Black, Hispanic, or Native American</td>
<td>-0.393</td>
<td>0.254</td>
<td>0.675</td>
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<td>-5.28</td>
</tr>
<tr>
<td>(1c) Asian American</td>
<td>0.652</td>
<td>0.308</td>
<td>1.919</td>
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</tr>
<tr>
<td>(2) Percent of non-Asian ethnic/racial minority classmates</td>
<td>0.064</td>
<td>0.048</td>
<td>1.066</td>
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</tr>
<tr>
<td>Interaction (1a) x (2)</td>
<td>-0.023</td>
<td>0.083</td>
<td>0.977</td>
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<td></td>
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<tr>
<td>Interaction (1b) x (2)</td>
<td>0.237</td>
<td>0.092</td>
<td>1.267</td>
<td>**</td>
<td>-2.10</td>
</tr>
<tr>
<td>Interaction (1c) x (2)</td>
<td>0.073</td>
<td>0.148</td>
<td>1.076</td>
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<tr>
<td>Intercept</td>
<td>1.897</td>
<td>0.730</td>
<td></td>
<td>**</td>
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<tr>
<td><strong>C</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model fit: no improvement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1a) Academic preparation: 25-50%tile</td>
<td>-0.502</td>
<td>0.170</td>
<td>0.605</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>(1b) Academic preparation: 50-75%tile</td>
<td>-0.520</td>
<td>0.191</td>
<td>0.595</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>(1c) Academic preparation: top quartile</td>
<td>-0.676</td>
<td>0.253</td>
<td>0.509</td>
<td>**</td>
<td>-9.08</td>
</tr>
<tr>
<td>(2) Percent of non-resident foreign classmates</td>
<td>0.160</td>
<td>0.084</td>
<td>1.173</td>
<td>0.058</td>
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<tr>
<td>Interaction (1a) x (2)</td>
<td>-0.026</td>
<td>0.191</td>
<td>0.974</td>
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<tr>
<td>Interaction (1b) x (2)</td>
<td>0.057</td>
<td>0.209</td>
<td>1.059</td>
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<tr>
<td>Interaction (1c) x (2)</td>
<td>0.484</td>
<td>0.242</td>
<td>1.622</td>
<td>*</td>
<td>-2.58</td>
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<tr>
<td>Intercept</td>
<td>1.720</td>
<td>0.816</td>
<td></td>
<td>*</td>
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<tr>
<td><strong>D</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model fit: no improvement</td>
<td></td>
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</tr>
<tr>
<td>(1a) Parent income unknown</td>
<td>-0.016</td>
<td>0.165</td>
<td>0.984</td>
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<tr>
<td>(1b) Parent income less than $30K</td>
<td>-0.055</td>
<td>0.286</td>
<td>0.946</td>
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<td>-0.74</td>
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<tr>
<td>(1c) Parent income $30-50K</td>
<td>0.276</td>
<td>0.253</td>
<td>1.318</td>
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<tr>
<td>(1d) Parent income $50-80K</td>
<td>0.069</td>
<td>0.192</td>
<td>1.071</td>
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<tr>
<td>(2) Percent of courses taught by adjunct/non-regular faculty members</td>
<td>-0.007</td>
<td>0.004</td>
<td>0.993</td>
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<tr>
<td>Interaction (1a) x (2)</td>
<td>-0.003</td>
<td>0.009</td>
<td>0.997</td>
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<td>Interaction (1b) x (2)</td>
<td>-0.028</td>
<td>0.013</td>
<td>0.972</td>
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<td>-1.12</td>
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<td>Interaction (1c) x (2)</td>
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<td>0.013</td>
<td>0.994</td>
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<tr>
<td>Interaction (1d) x (2)</td>
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<td>0.010</td>
<td>1.005</td>
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<tr>
<td>Intercept</td>
<td>1.506</td>
<td>0.830</td>
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<td>Model fit: $X^2$ difference significant at 0.05</td>
<td>Estimate</td>
<td>S.E.</td>
<td>Exp(B)</td>
<td>Sig.</td>
<td>% Δ - p</td>
</tr>
<tr>
<td>----------------</td>
<td>----------</td>
<td>------</td>
<td>--------</td>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>(1) Male</td>
<td>0.528</td>
<td>0.152</td>
<td>1.696</td>
<td>***</td>
<td>7.10</td>
</tr>
<tr>
<td>(2) First-year cumulative GPA (x10)</td>
<td>0.108</td>
<td>0.010</td>
<td>1.114</td>
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<td></td>
</tr>
<tr>
<td>Interaction (1) x (2)</td>
<td>0.029</td>
<td>0.014</td>
<td>1.029</td>
<td>*</td>
<td>7.48</td>
</tr>
<tr>
<td>Intercept</td>
<td>1.754</td>
<td>0.851</td>
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</tr>
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</table>

**F**

<table>
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<tr>
<th>Model fit: $X^2$ difference significant at 0.01</th>
<th>Estimate</th>
<th>S.E.</th>
<th>Exp(B)</th>
<th>Sig.</th>
<th>% Δ - p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1a) Academic preparation: 25-50%tile</td>
<td>-0.617</td>
<td>0.229</td>
<td>0.540</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>(1b) Academic preparation: 50-75%tile</td>
<td>-0.892</td>
<td>0.246</td>
<td>0.410</td>
<td>***</td>
<td>-11.98</td>
</tr>
<tr>
<td>(1c) Academic preparation: top quartile</td>
<td>-1.214</td>
<td>0.299</td>
<td>0.297</td>
<td>***</td>
<td>-16.32</td>
</tr>
<tr>
<td>(2) Lived on campus</td>
<td>0.079</td>
<td>0.159</td>
<td>1.083</td>
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<td></td>
</tr>
<tr>
<td>Interaction (1a) x (2)</td>
<td>0.260</td>
<td>0.316</td>
<td>1.296</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction (1b) x (2)</td>
<td>0.829</td>
<td>0.338</td>
<td>2.290</td>
<td>*</td>
<td>-0.85</td>
</tr>
<tr>
<td>Interaction (1c) x (2)</td>
<td>1.105</td>
<td>0.370</td>
<td>3.019</td>
<td>**</td>
<td>-1.47</td>
</tr>
<tr>
<td>Intercept</td>
<td>-1.520</td>
<td>0.872</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**G**

<table>
<thead>
<tr>
<th>Model fit: $X^2$ difference significant at 0.05</th>
<th>Estimate</th>
<th>S.E.</th>
<th>Exp(B)</th>
<th>Sig.</th>
<th>% Δ - p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Male</td>
<td>0.302</td>
<td>0.139</td>
<td>1.353</td>
<td>*</td>
<td>4.05</td>
</tr>
<tr>
<td>(2) Was employed on campus</td>
<td>0.612</td>
<td>0.281</td>
<td>1.844</td>
<td>*</td>
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</tr>
<tr>
<td>Interaction (1) x (2)</td>
<td>1.288</td>
<td>0.558</td>
<td>3.625</td>
<td>*</td>
<td>21.37</td>
</tr>
<tr>
<td>Intercept</td>
<td>-1.335</td>
<td>0.874</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**H**

<table>
<thead>
<tr>
<th>Model fit: no improvement</th>
<th>Estimate</th>
<th>S.E.</th>
<th>Exp(B)</th>
<th>Sig.</th>
<th>% Δ - p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1a) Parent income unknown</td>
<td>0.040</td>
<td>0.178</td>
<td>1.041</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1b) Parent income less than $30K</td>
<td>0.179</td>
<td>0.307</td>
<td>1.197</td>
<td>2.41</td>
<td></td>
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<tr>
<td>(1c) Parent income $30-50K</td>
<td>0.291</td>
<td>0.264</td>
<td>1.338</td>
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</tr>
<tr>
<td>(1d) Parent income $50-80K</td>
<td>0.130</td>
<td>0.209</td>
<td>1.139</td>
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<td></td>
</tr>
<tr>
<td>(2) Took a diversity course</td>
<td>0.110</td>
<td>0.183</td>
<td>1.161</td>
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</tr>
<tr>
<td>Interaction (1a) x (2)</td>
<td>-0.358</td>
<td>0.423</td>
<td>0.699</td>
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</tr>
<tr>
<td>Interaction (1b) x (2)</td>
<td>-1.245</td>
<td>0.551</td>
<td>0.288</td>
<td>*</td>
<td>-14.31</td>
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<tr>
<td>Interaction (1c) x (2)</td>
<td>-0.063</td>
<td>0.625</td>
<td>0.939</td>
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<td></td>
</tr>
<tr>
<td>Interaction (1d) x (2)</td>
<td>-0.361</td>
<td>0.495</td>
<td>0.697</td>
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<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>1.140</td>
<td>1.044</td>
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<td></td>
</tr>
</tbody>
</table>

***p ≤ .001; **p ≤ .01; *p ≤ .05

Note: Model fit based on omnibus chi-square difference due to addition of interaction term to all variables in Tables 6 and 7; all continuous variables are centered around mean; % change in $p$ for the interaction term is based on the multiplicative factor by which the odds ratio comparing the predicted odds for the significant group versus the reference group changes given a one-unit change in the other variable (see Jaccard, 2001).