**Bioorthogonal Chemistry Challenge:** In 2003, Carolyn Bertozzi coined the term "bioorthogonal chemistry" to refer to chemical reactions that can take place in living systems but do not interfere with native biological processes. As a consequence of their circumstances, bioorthogonal reactions have extreme constraints. For example, they require: aqueous compatibility, tolerance for a potpourri of polar functional groups and very high reaction rates. As a result, energetic reagents with "soft" reactive groups are commonly employed.

For this team challenge, you have recently been hired as the lone synthetic chemistry team in a biotech startup focused on diagnostics. Your company cannot afford a SciFinder license or journal subscriptions, and you have been tasked with preparing the following compounds, each of which is known to participate in a specific bioorthogonal ligation. Working in teams, for each of the molecules below: (1) propose a concise forward synthesis from simple starting materials, (2) provide a representative reaction partner, and (3) give the name of its inventor(s).

You are not permitted to use a computer for this team challenge. If you have a question about starting material availability, ask Keary.

![Compound A](image)


![Compound B](image)


![Compound C](image)