**Brief Background:**

Bedbugs are parasitic insects that feed exclusively on blood. The name is derived from their preferred habitat of inside bedding and sheets. These bugs are primarily nocturnal and generally feed on their hosts without being noticed.

Newly hatched nymphs are translucent but become browner as they mature. Bedbugs are light brown or reddish brown during their adult stage and grow to about 4 – 5 mm long.

Bedbugs can survive in a wide range of climates and temperatures. They can survive up to 5 days in 14 F temperatures and in temperatures up to 113 F.

Bedbugs are attracted to their hosts by carbon dioxide and warmth. They prefer to feed on the face, feet, and arms of people and leave large itchy welts that can take weeks to go away.

Eradication is difficult. The treatment requires both pesticide and nonpesticide approaches.
Life Cycle

**Egg:** The egg is about 1.5 mm long. Eggs are laid in clusters of 50 in dark hidden areas and take about 1 - 2 weeks to hatch.

**First Instar Nymph:** Once hatched this stage is about 1.5 mm long and is translucent. Once this stage feeds it will molt.

**Second Instar Nymph:** After molting this stage is about 2 mm in length and begins to turn brown. After feeding it will molt.

**Third Instar Nymph:** After molting this stage reaches a length of about 2.5 mm. This stage will feed and then molt.

**Fourth Instar Nymph:** After molting this stage will grow to about 3 mm in length. This stage will feed once and then molt.

**Fifth Instar Nymph:** After molting this stage will grow to about 5.5 mm in length. This stage will feed multiple times over several weeks. Females will lay up to 5 eggs per day.

**Adult:** After molting the adult will grow to about 5.5 mm in length. This stage will feed multiple times over several weeks. Females will lay up to 5 eggs per day.

It will take bedbugs about 3 weeks to mature through the nymph stages. However adult bedbugs can live for about 10 months.
Bedbugs in the Library

Common places for bedbugs to reside are in books. Books provide a warm dark environment for the bugs to lay their eggs and hide prior to feeding.

Bedbugs can commonly be found in the spines of books or in the center of pages nearest the central crease or gutter of the book.

Since bedbugs are relatively small in size they may not be initially detected. However if a book with bedbugs is disturbed, staff will notice the adults begin to stir. Staff may also notice egg clusters and small blood stains in the book as well.

If bedbugs are found in a book, then place it in a sealable bag immediately. Do not move anything from the work area and notify appropriate staff to begin treatment. Also, make sure any clothing that may have contacted the book is placed in a sealed bag to be treated or destroyed.
Proactive Treatment

If a patron notifies staff that they have bedbugs prior to return, arrange to meet the patron outside the library to limit the risk of bringing bedbugs into the building, and place the books in a sealable bag. If staff finds bedbugs in returned books, then immediately bag the books, notify the patron and library administration to begin quarantine and treatment.

Professional Treatment

Profession treatment will require the use to two different techniques. First they will remove any visible bedbugs using specialized equipment. Secondly they will use a host of chemical pesticides to kill any eggs and missed bugs. This process may take several treatments to guarantee eradication. The company may also remove and destroy any infested material.

In House Treatment

There is a wide range of products available on the market to help stop the spread of bedbugs. Commonly used products are pesticide sprays and portable heaters. However bedbugs are extremely adaptive and become resistant easily. Heaters are good for killing the bugs, but take time to reach temperatures needed to kill the bugs.
Warning Signs: Patrons

Bedbugs commonly feed on the arms, feet, neck and face of their hosts.

Bedbug bites leave large inflamed welts in clusters and may include blisters. The bites can take weeks to heal.

If staff notices a patron with bites, quarantine any materials in a sealable bag and notify the appropriate staff member of the possible signs of bedbugs.