



Dear Virginia Educators,

It has been a privilege to follow Kristi DeCourcy's long tenure as the founding program manager for Biotech in a Box. The relationships, infrastructure, manuals and lab activities that she developed have made it possible for the outreach program to continue and grow. Many thanks to you for supporting Biotech in a Box by trusting us to bring hands-on biotechnology into your classrooms. You are inspiring us to develop new initiatives within our outreach program. I thank you for your gracious support and feedback as I navigated my first year and I look forward to hearing from you as we prepare for the 2023-24 academic year.

~Sandy Hancock

2023–2024 LOAN PROGRAM INFORMATION

Welcome to the 30th year of Biotech in a Box!

The outreach program started with a single DNA Biotechnology Kit in 1994. For the 2023-2024 academic school year, we are delighted to serve Virginia middle schools, high schools, and community colleges with our loan program that now offers 5 different kits: DNA Biotechnology, Protein Electrophoresis, Column Chromatography, Introduction to Immunology, and Slime Mold Behavior. Two thermal cyclers are also available to borrow. For detailed information about each kit, download kit manuals on the Biotech in a Box website:

<https://fralinlifesci.vt.edu/education-and-outreach/biotech-in-a-box.html>

Kit Loan Reservations

Starting in mid-May, loan request forms are available on the Biotech in a Box website or by request to our new email address **biotechninbox@vt.edu**.

- Complete and return the loan form by email attachment to **biotechninbox@vt.edu**. If you do not receive confirmation within one week that the loan request was received, please reach out to be sure we received the form.
- Please select **four** preferred date choices for each kit requested. We will do our best to fill your first or second choices.
- **Kits available to middle schools:** DNA Biotechnology demo, Intro to Immunology, Slime Mold Behavior
- **To be included in the initial scheduling**, please return the loan form by **July 14, 2023**. Loan confirmations will be sent by August 1, 2023. We will continue to accept loan requests throughout the year.
- **If there are multiple teachers at your school** who wish to use one of the equipment-heavy kits (DNA, protein, thermal cycler), please try to coordinate your requests. If needed, we can schedule extended loans to accommodate large number of students. Include all teacher names on the kit-specific form.

- **Requesting a kit(s) for both semesters**
 - DNA, Protein, thermal cycler (equipment-heavy) kits: submit a loan request for only the first semester during the initial scheduling. For the second semester, contact us in December 2023 or January 2024 for a list of loan dates available for the second semester.
 - Chromatography, Slime mold, Immunology: include dates for both semesters on your loan form.
- Loans are made to specific teachers. If you are no longer able to use the kit and would like to transfer to another teacher in your school, please notify us about the change.
- DNA, protein, chromatography, thermal cycler loan period is 2 weeks; Immunology and slime mold loan period is 3 weeks
- **DNA Biotechnology Kit information:**
 - **If you have your own equipment**, we can provide just the expendables (supplies/solutions/samples) for the experiment. Simply indicate **YES** for “expendables only” on the loan form and select the items you will need at the bottom of the form.
 - **The 1kb DNA ladder** is an optional item and will only be included in the kit if you select **YES** on the loan form and indicate how many classes will use the DNA ladder. The maximum amount that we can send is enough for 10 classes; 8 groups/class. If you are not graphing the DNA fragment sizes, you will not need the DNA ladder.
- **Protein Electrophoresis Kit information:**
 - The kit includes **five** Bio-Rad 12% Mini-PROTEAN® TGX™ Precast polyacrylamide gels. **If you would like to purchase extra gels** for your classes (Bio-Rad catalog no. 4561043EDU), we will provide the solutions and supplies for up to 10 additional gels. Please indicate the number of extra gels on the loan form.
 - Starting in 2019, we switched to Bio-Safe Coomassie for the protein stain. Bio-Safe Coomassie requires only water rinses.
- **Thermal Cycler**
 - The thermal cycler loan is the instrument only, not a kit. It will be shipped with the operating instructions. If you would like to use the thermal cycler at the same time as the DNA Biotechnology Kit, please choose compatible loan slots and include a note on both loan forms indicating you would like the loans to be concurrent.

Shipping the Kit from Virginia Tech

There is no cost to you for shipping. Kits are shipped by FedEx and your kit will include a return shipping label.

- All kits (except the Immunology Kit) ship on Wednesday by FedEx for delivery by 4 pm on the first Monday of the loan period. If a kit arrives early, the materials can be stored at room temperature if the kit is not unpacked until Monday.
- Immunology Kits ship on Monday for delivery on Tuesday morning; the kit contains materials that are temperature-sensitive and must be properly stored upon receipt.
- One to two weeks before your kit is shipped, we will email a reminder to confirm the loan. Please reply to the email to let us know your plans for the kit are unchanged or that you need to cancel/reschedule.

Receiving the Kit at your school

- You will receive an email from FedEx when the kit ships from Virginia Tech, and a second email when it is delivered to the school.
- Unpack the kit and check the contents when the kit arrives. A checklist is included with the kit. **Email immediately if anything is missing from the kit: biotechninbox@vt.edu**

Packing and Returning the Kit to Virginia Tech

Please help us keep on schedule by shipping the kit back on the Monday or Tuesday following the Friday that ends your loan period. If you need an extension, please contact us and we will do our best to accommodate your request.

- Please repack the kit carefully. Use the checklist to track the supplies and return the checklist with the kit.
- Return **unused** lab supplies: pipettes, pipette tips, tubes, ELISA plates. Please do not return used supplies; do not mix used and unused supplies.
- Return **unopened** solutions in **tubes** double bagged to prevent leakage; discard partially used solutions and tubes according to standard lab practices.
- Return solution in bottles.
- Immunology Kit: return unused TMB tablets.
- Chromatography Kit: return unused sample solution (wrapped in foil)

Questions?

For any questions, please contact:

Sandy Hancock at 540-231-7959 (w) or 540-818-5664 (c), biotechninbox@vt.edu