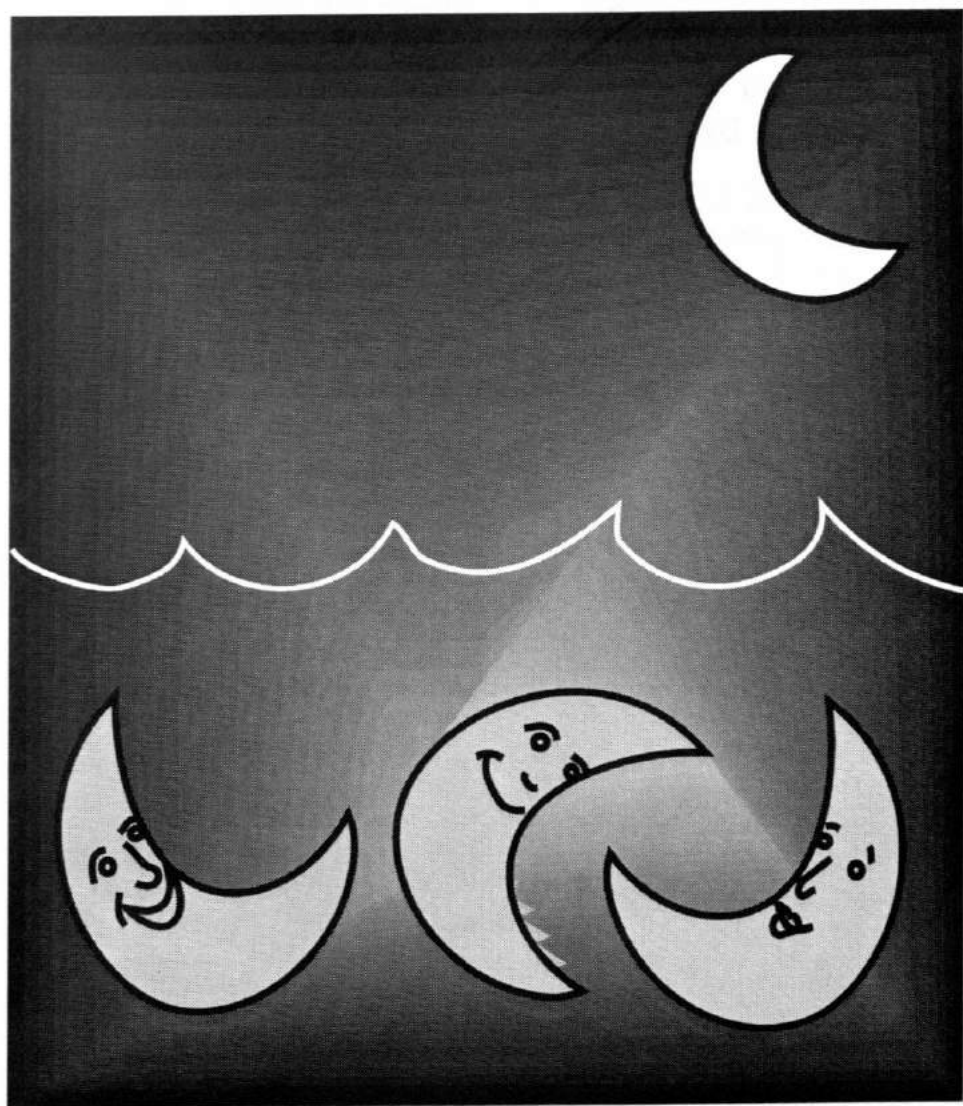


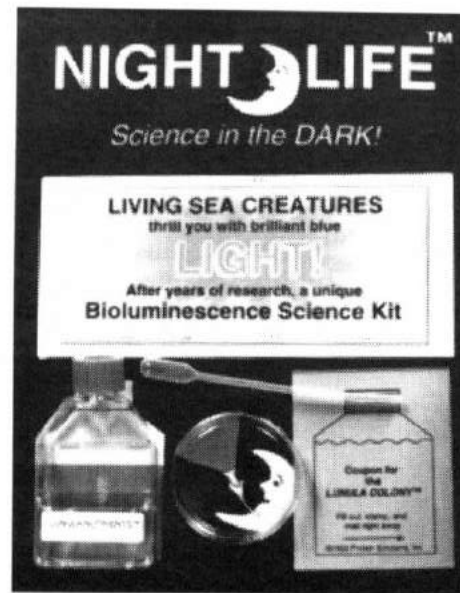
**PROTEIN
SOLUTIONS INC.
1994-1995 CATALOG**



Bioluminescence is light made by living things. The most common example is the firefly. However, there are hundreds of other living things that make light. Protein Solutions Inc. (PSI) specializes in a tiny marine plankton called *Pyrocystis lunula*, a dinoflagellate. It is algae, a microscopic plant that lives in temperate oceans all over the world and the light it makes is often mistaken for phosphorescence. We use these beautiful algae to bring science into the home and classroom in an affordable, easy way. Our goals are to make learning about science fun and to demonstrate how the different branches of science - chemistry, physics and biology - work together in real life.

LIVING SEA CREATURES MAKE BEAUTIFUL BLUE LIGHT

Our bioluminescent kits may be ordered in one of two ways. If you order a kit with a *coupon*, you are required to mail the coupon back to us to receive your living Colony. If you order a kit with *Colony included*, your kit will arrive with live Colony. If you have any questions about the difference, please call 1-800-476-8564 before ordering. Thank you.



NIGHT-LIFE™

Night Life™ is PSI's **Science in the Dark** educational kit. The kit contains actual lab components - tissue culture flask with nutrients, Petri dish, pipet, blotter paper and clear, easy to follow instructions. Recommended for ages 10-16 as well as for teachers and other adults. Ideal for Science Fair projects.

#120 Night Life™ Kit with Coupon \$ 19.95

#121 Night Life™ Kit with Live Colony \$ 19.95



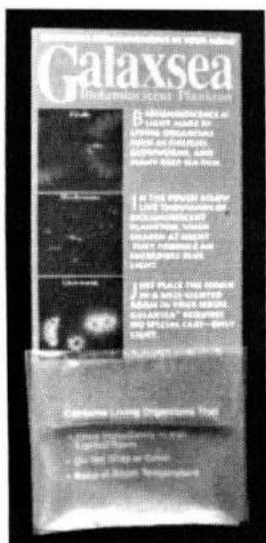
NIGHT-LIFE™ TEACHERS KIT

Teach **Science in the Dark**. Illuminate your classroom with these unique creatures. Spark interest and pique curiosity as you teach biology, chemistry, physics, earth science and ecology with bioluminescent phytoplankton.

The standard teacher's kit contains 10 sets of Petri dishes, pipettes, test tubes, blotter paper, owner's manuals and 10 bags of *Lunula colony*™ plus a teacher's flask. We also make kits to order.

#130 Night Life Teacher's Kit with Coupon \$ 39.95

#131 Night Life Teacher's Kit with Live Colony \$ 39.95



GALAXSEA™

Bring home the exciting world of bioluminescence with these tiny phytoplankton in a sealed ecosystem. This living product includes a beautiful color insert with information about bioluminescence and instructions on care. This product cannot be wrapped or covered. *Galaxsea*™ must be exposed to normal room light for 8-14 hours every day, with temperatures in the range of 50-75° F.

#220 *Galaxsea*™ Live Colony \$ 6.95

BIOLUMINESCENCE DEMONSTRATION KITS

This kit is suggested for use in **one time only** demonstrations to small groups such as Girl Scouts, science workshops, seminars, classroom and museum presentations. The kit contains 10 - 20 small bags which can be passed out or thrown into the audience for dramatic effect. Also included is information and references on bioluminescence in general and dinoflagellates (phytoplankton) in particular. The number of bags depends on your requirements. Call and let us help you design your scintillating presentation.

Bioluminescence Demo Kit Live Colony

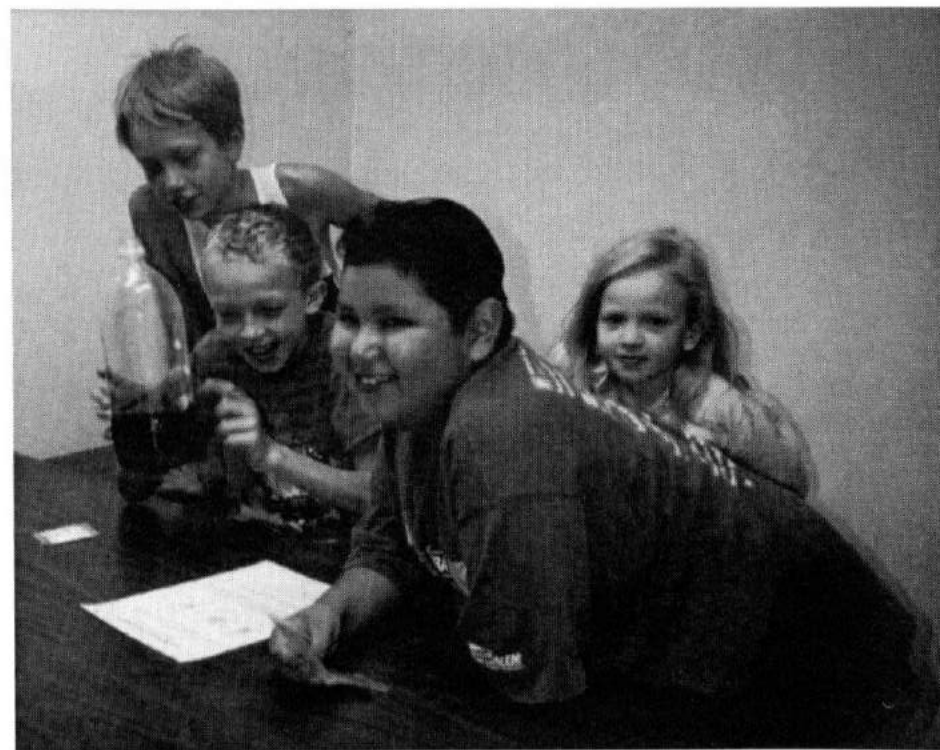
#460 10 bags \$ 24.95

#461 20 bags \$ 44.95

INDIVIDUAL EXPERIMENT KIT AND BOOK

This book takes you step by step through experiments using bioluminescent Colony bags which are included with the kit. Learn about Circadian rhythms, jet lag, sleep deprivation and temperature effects on an enclosed eco-system.

#320 *Experiment Book with Live Colony* \$16.95.



RECYCLE KIT

Grow your own bioluminescent colony using a recycled clear soda pop bottle. Kit includes everything you need: salt packet to make your own sea water, starter colony and instructions. All you need is a clean, clear soda bottle then you can create a miniature ocean and help the environment at the same time.

#321 *Recycling Kit with Live Colony* \$ 4.95

LUMINESCENCE KIT

Experience different kinds of luminescence such as chemiluminescence, triboluminescence, bioluminescence and phosphorescence and learn about the importance of each in the world around you. This kit contains mint candies that spark when they are crushed, a bandage that gives off light when it is opened, a light stick, a glow in the dark sticker and a bag of tiny, **living** sea plankton that lights up when shaken at night.

#322 Luminescence kit with Live Colony \$ 9.95



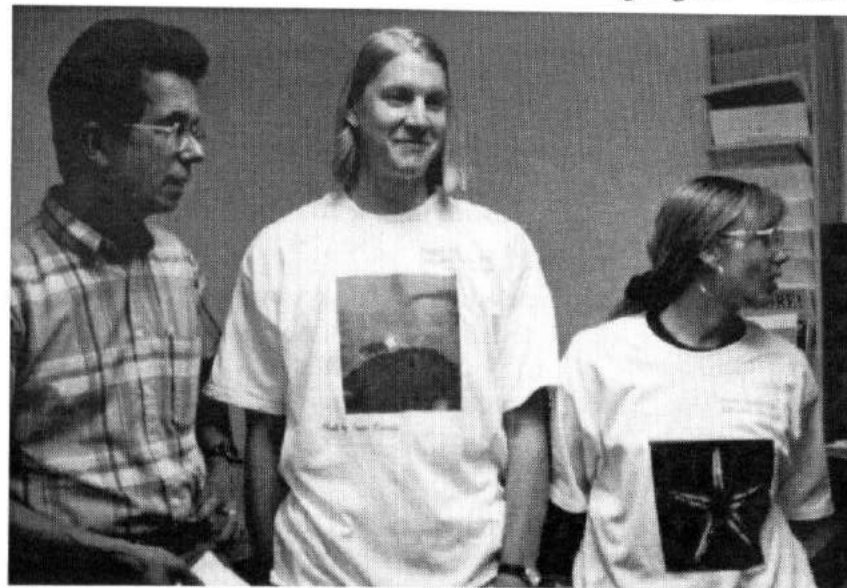
NIGHT LIFE™ SCIENCE IN THE DARK T-SHIRT

520 \$ 15.00

BIOLUMINESCENCE: LIFE MAKING LIGHT T-SHIRT

Firefly or Seastar - please specify when ordering

521 \$ 29.95 #522 Glow in the dark highlights \$34.95



Technurios™

Coming Soon....

Technurios™ are technologically important novelties being used to further general public understanding of science as it relates to our everyday lives.

“The Frankenstein Hand.” (Ionically responsive polymer.) The concept of electrically driven motility is one which stimulates the imagination. Imagine a material configured such, that when an electric current is passed through it, it will flip over or “walk” across a table or desktop. (Ages 15 and up.)

“Ghostly Water.” (Water soluble/temperature responsive polymer.) When the polymer solution reaches a temperature of 32°C or greater it will cloud or precipitate; at temperatures less than 32°C the solution is clear and appears as colored or clear water. The “ghost” in the solution can be made to appear simply by holding the container in one’s hand and allowing it to reach body temperature, >32°C. Several people could participate in a timed contest to see who has the ability to raise the solution’s temperature the fastest. (Ages 15 and up.)

"Shape Memory Polymer." (Polynorbornene.) Imagine a polymer which retains a "memory" of its original shape even after being bent or molded into a different configuration. The polymer remembers its original shape when it is raised above its glass transition temperature of 37°C. (Ages 8 and up.)

"The Inventor." (Composite Construction.) By mixing various supplied materials the explorer can attempt to construct a new material which will perform better than either of the single materials making up the composite. Several people could compete to construct the strongest material or the material which could withstand the most bending. (Ages 15 and up.)

"Funny Putty." By crosslinking polyvinyl alcohol or polyvinyl acetate (Elmer's®) with a solution of sodium tetraborate (Borax®) a new material can be made that is fun and safe. The concept of hydrogen bonding can be explained and ways of making the new material with different properties can be explored. (Ages 8 and up.)

"Thermal Spring." (Elastomers.) There are several billion rubber bands manufactured every year; most of them are used by the U.S. Postal Service. By modifying the geometry of a simple rubber band, we can make a material which generates a noticeable temperature change - heating upon stretching and cooling upon contraction. Likewise, by actively heating the elastomer its length will decrease, and by actively cooling the elastomer, its length will increase.

The Lables Lab™ Series

Coming Soon....

- **Motivation:** A very large number of science and engineering courses taught in colleges and universities today do not involve laboratories. Although good instructors incorporate class demonstrations, hands on homework and various teaching aids, including computer simulations, the fact is that students in such courses often accept key concepts and experimental results without discovering them for themselves. The only partial solution to this problem has been increasing use of class demonstrations and computer simulations.

We are developing a completely self contained laboratory which, although packaged like a textbook, will contain within it all of the materials, equipment and information needed to directly discover and experience key concepts related to various science topics.

- The Lables Lab™ is a system of student kits designed for individual use in high school and undergraduate classrooms. They will serve as supplements to traditional classroom texts. Kits will be available for study in: **polymers,* chemistry,** physics,** biochemistry,** ecology,** and biology.****

- Each kit includes all of the materials and equipment necessary to *develop interests, encourage experimentation and allow discovery* of scientific principles. A science "enabler." Ten to twenty scientific explorations are designed into each kit.

- To keep the Lables Lab™ safe and inexpensive, most exploration materials will be common "household goods" and all of the equipment will be simple. Instead of using expensive analysis equipment, the student will perform characterizations using their built in sensors (eyes, ears, nose and hands).

*Currently in development.

**Future project ideas.

- The Lables Lab™ is primarily intended for use in classes where no laboratory exists. These may include distance learning or telecourses, places where the costs of maintaining a laboratory are too high, home schooling, continuing education programs and industrial education programs.

USEFUL INFORMATION

GENERAL INFORMATION

Address: Protein Solutions Inc.(PSI)
350 West 800 North, Suite 218, Salt Lake City, Utah 84103
Telephone Number: 1-801-596-2675 or 1-800-476-8564

Hours of Operation: Monday-Friday, 9:00-5:00 Mountain Time
Fax Number: 1-801-596-2675

SHIPPING INFORMATION

Once we receive your order, it leaves our lab within three working days. The majority of our orders are shipped U.S. mail unless you request otherwise. Live Colony is sent by first class mail. **OVERNIGHT AND 2-DAY DELIVERY ARE AVAILABLE. PLEASE CALL FOR PRICING.**

CLAIMS AND RETURNS

All claims for missing items or damaged goods must be made within 10 working days of receiving them. If returning an item, please use the original package if possible and include all paper work.

A NOTE TO SCHOOLS AND TEACHERS

We will accept school purchase orders by mail or fax only. Call in purchase orders are not accepted. All school orders must have a school official's signature and title.

ORDERING LIVE VERSUS ORDERING COUPONS

If you are ordering live Colony, make sure you are ready to use it. All shipments containing live materials **must** be opened immediately upon receipt. If you are a school and your orders arrive at a warehouse, make arrangements to have your living materials handled. **We are not responsible for live shipments that are left unattended.**

Order Form

To order by phone: 1-800-476-8564

	PRODUCT	PRICE	QTY	TOTAL
120	Night-Life™ with coupon	\$19.95		
121	Night-Life™ with Live Colony	\$19.95		
130	Night-Life™ Teachers Kit	\$39.95		
	with coupon			
131	Night-Life™ Teachers Kit	\$39.95		
	with Live Colony			
220	Galaxsea™ Live Colony	\$6.95		
320	Experiment Kit and Book Live	\$16.95		
321	Recycle Kit Live Colony	\$4.95		
322	Luminescence Kit Live Colony	\$9.95		
460	Bioluminescence Demo			
	Kit with 10 Live Colony Bags	\$24.95		
461	Bioluminescence Demo			
	Kit with 20 Live Colony bags	\$44.95		
520	Night-Life™ T-Shirt	\$15.00		
521	Bioluminescence: Life Making			
	Light T-Shirt: Firefly or Starfish	\$29.95		
522	Life Making Light T-Shirt			
	Glow in the Dark Highlights	\$34.95		
	Sizes: Large X-Large			
	SUB TOTAL			
	SHIPPING AND HANDLING FEE			\$5.00
	UTAH STATE SALES TAX 6.125% OF SUB TOTAL			
	TOTAL ORDER			

SHIP TO:

NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

PHONE: () _____ FAX: () _____

Make check or money order out to Protein Solutions Inc.
350 West 800 North, Suite 218 • Salt Lake City, Utah 84103 -1441
Phone/Fax (801) 596-2675



Protein Solutions, Inc. (PSI)
Science Education Innovators
350 West 800 North, Suite 218
Salt Lake City, Utah 84103
Phone/FAX (801) 596-2675