



Research Partnerships at BNL

Ivar Strand, M.B.A
Manager

Office of Research Partnerships

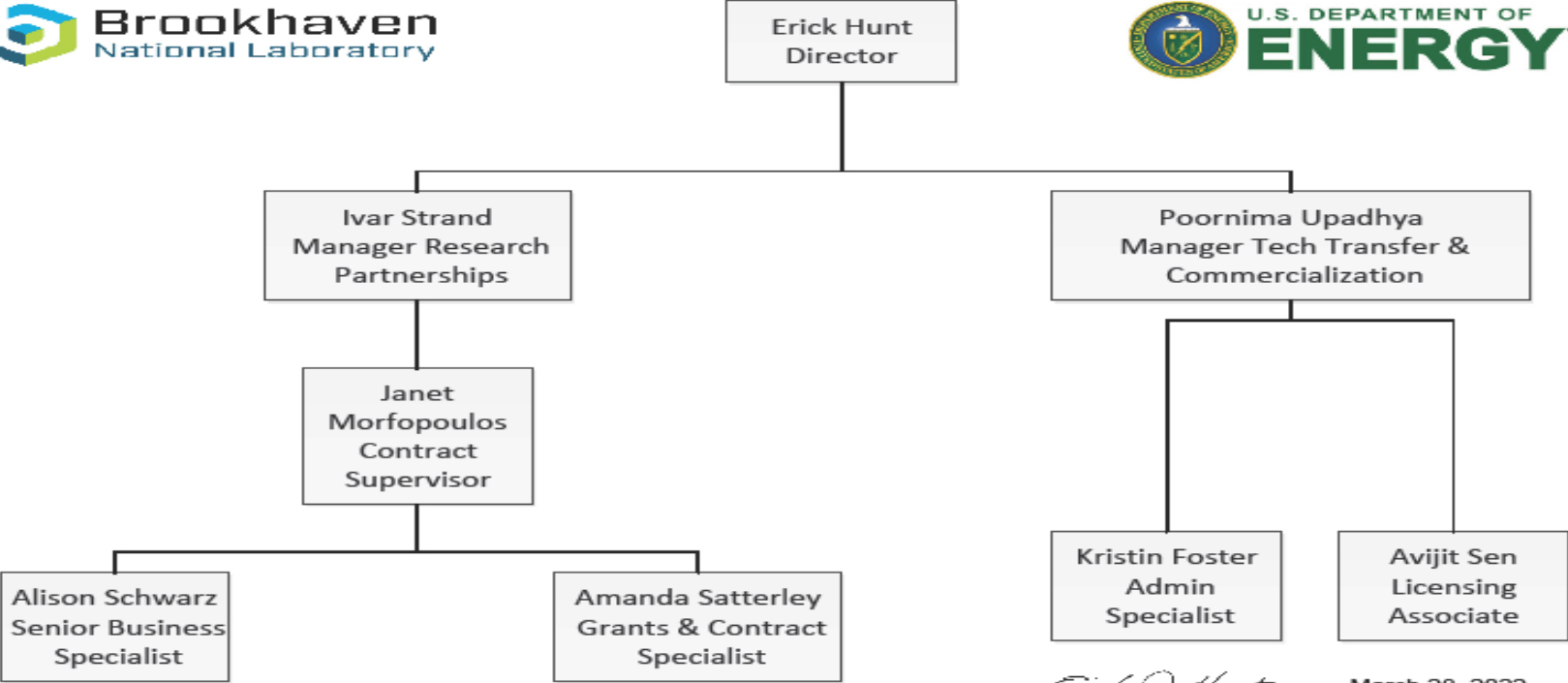
Date: 5-12-2022



My Biography

- First generation Norwegian with both parents emigrating here after WWII
- Brother is a veterinarian in Norway and is an active researcher in equine medicine
- Built the Sponsored Program enterprise at Stony Brook University
- Have worked in health care, private and public education systems and federal lab in research administration space
- MBA from Dowling College and 2 undergraduate degrees from the University of Miami
- Been at BNL Managing Research Partnerships for 2 years now

Research Partnerships and Technology Transfer



Erick J. Hunt
Erick Hunt

March 28, 2022
Date

Types of Partnering Agreements

- Cooperative Research and Development Agreement (CRADA)
- Funds-In Agreement Strategic Partnerships Projects (SPP)
- Technical Services Agreement (TSA)
- Interagency Agreement (IAA)
- Agreements for Commercializing Technology (ACT)
- Non-disclosure Agreements (NDA)

Proposal Information Management System (PIMS)

- What is PIMS?
- Risk Assessment can now be submitted for Research Partnership activity as well as DOE activity
- Proposal Information Questionnaire can be submitted for Research Partnership activity once a Risk Assessment has been completed
- Project underway to make Joint Work Statement part of the PIMS process
- Annual certification of DOE Risk Assessment also a project in the pipeline

Prominent Projects RP has been involved in

- Contract Manager for 100M Electron Ion Collider project
- Primary interface on all funding coming from NYS
- Handle all contract activity for the use of NSRL, Tandem and Cryo-EM facilities
- Facilitate approval of Research Partnerships with Foreign Entities (Mercedes, Toyota, GSK, the European Union etc.)
- Engaged in several collaborations involving multiple labs (Atom, L'Innovator etc.)

Questions?

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Technology Transfer at BNL

Poorni Upadhyya, Ph.D. M.B.A
Manager

Office of Technology Transfer

Date: 5-12-2022



@BrookhavenLab

About Me

- Born and brought up in Bengaluru, India
- Ph.D in Biochemistry from Indian Institute of Science
- Research on PKD at Jackson Laboratory, ME
- Continued research at Vanderbilt University, TN
- Continued research at Long Island Jewish Medical Center, NY
- MBA in Finance from Stony Brook University, interned at BNL's Technology Transfer Office and never left...



Technology Transfer - Is a DOE Mission

Technology transfer is the process by which existing knowledge, facilities, or capabilities developed under federal research and development (R&D) funding are utilized to fulfill public and private needs.

Types of Intellectual Property (IP)

Utility Patent - Covers product, process, or machine

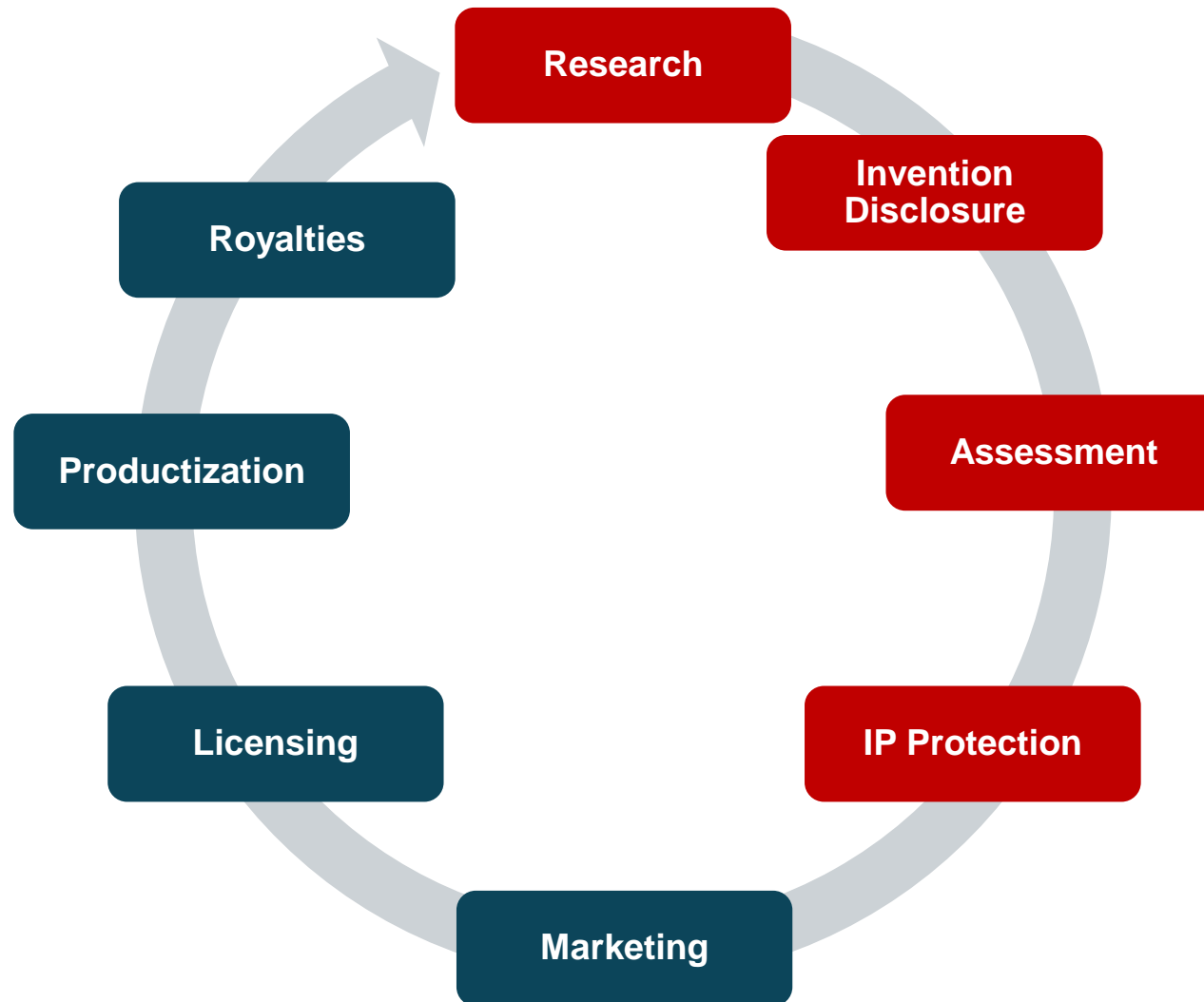
Design Patent - Covers product that has a distinct design, distinct ornamentation or both

Copyright - Protects original works of authorship in a tangible form of expression

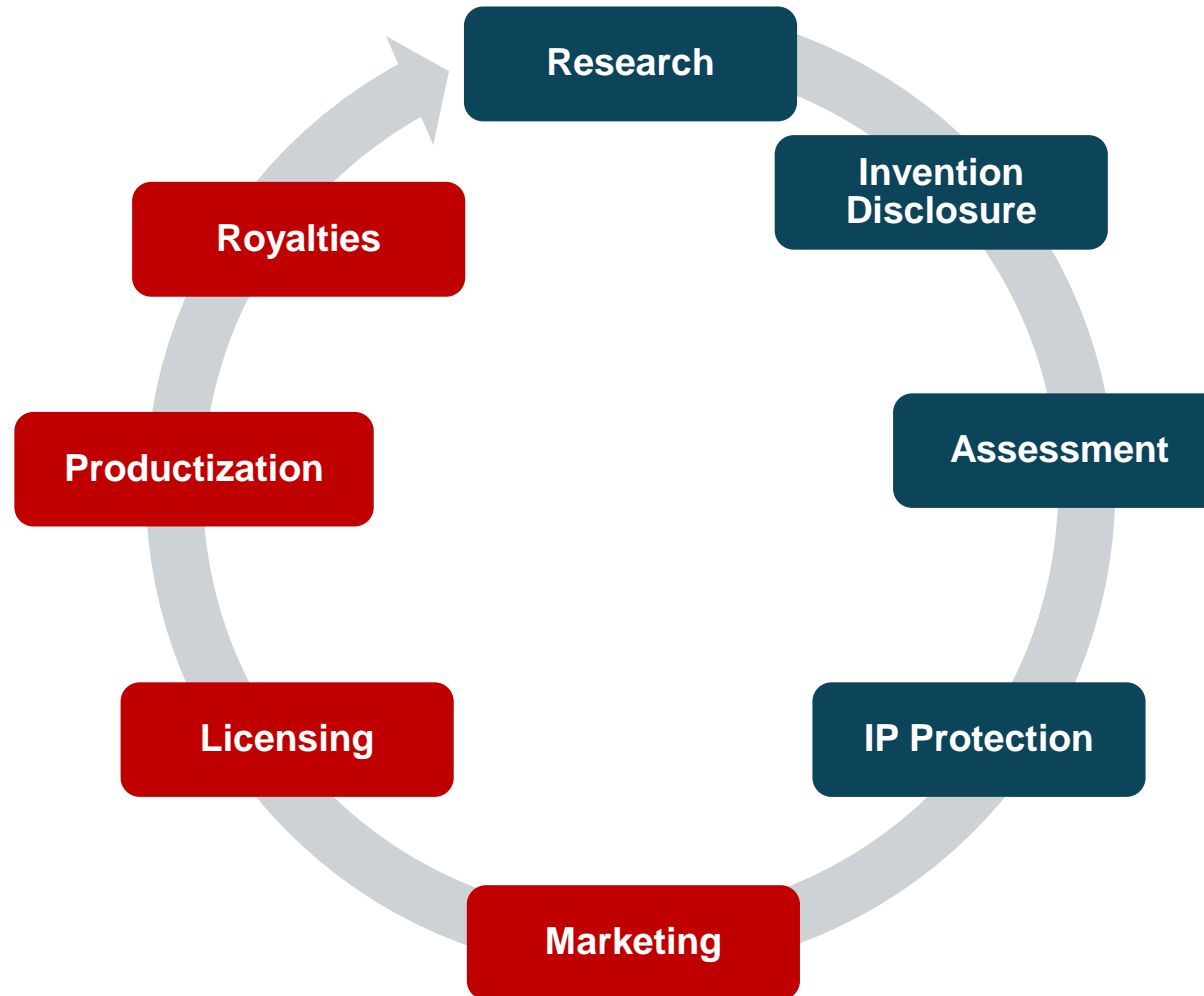
Trademark - Protects any word, phrase, symbol, design, or a combination of these things that identifies your goods or services.

Trade secret - Any practice or process that is not known outside of the organization

Technology Transfer Process at a Glance



Technology Transfer Process at a Glance



It takes a Community!

- Researchers
- Intellectual Property Professionals
- Technology Transfer Professionals
- License Administrator
- Licensees – Industry, Entrepreneur, Venture Capitalist

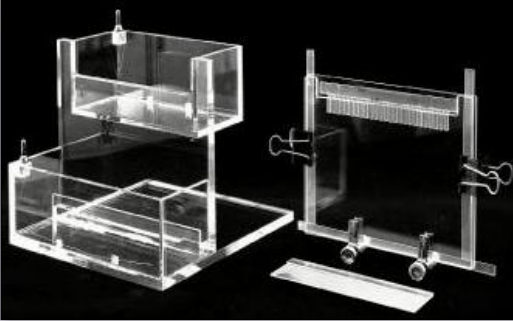
Bacteriophage T7 Protein Expression System

Method to produce wide range of proteins

Pioneering discoveries that shaped the field of recombinant DNA technology

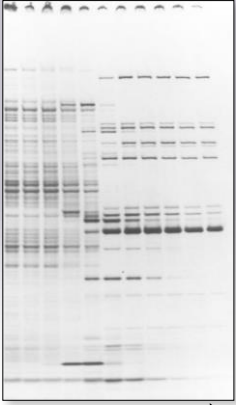
← AEC*/DOE →

Foundation

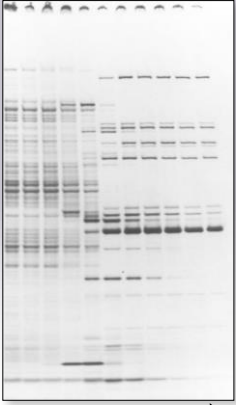


Slab-gel electrophoresis – enables resolution and time lapse comparison of complex biomolecule mixtures (1973).

E. coli proteins



T7 proteins



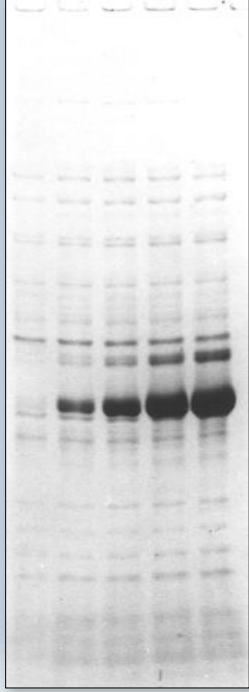
Time after infection

Basic research discovers how bacterial virus T7 uses *E. coli* protein production machinery.

← NIH →

Development

E. coli proteins ↓



Time after start of producing target protein

← Target protein

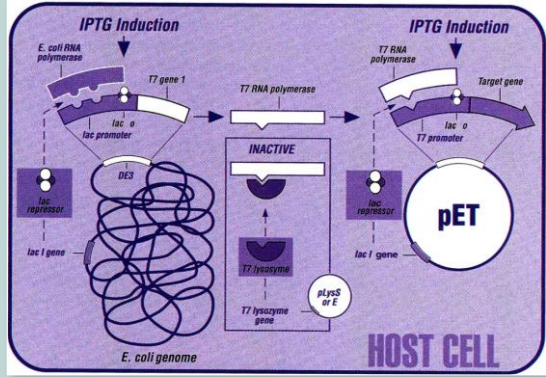
Elements isolated from T7 virus are assembled to direct *E. coli* to produce desired proteins from the cloned gene

← Industry →

Market

701 companies have had licenses to the T7 system for proprietary R&D work

166 companies have licensed the T7 system for commercial production of proteins such as enzymes or therapeutics



Highly efficient system for producing proteins with end use in:

- Basic biomedical research
- Diagnostics
- Treatment

Technetium (Tc) – 99m

Used as a Medical Tracer

Most common radioisotope used in diagnosis, with 30 million procedures per year

AEC*

NIH

Industry

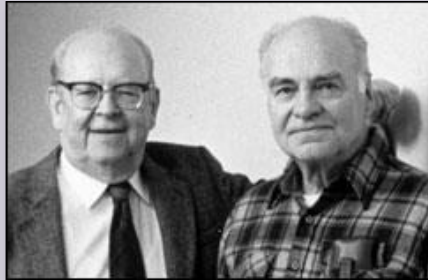
1960

The most widely used radioisotope for medical diagnosis

2010

Foundation

Inventors

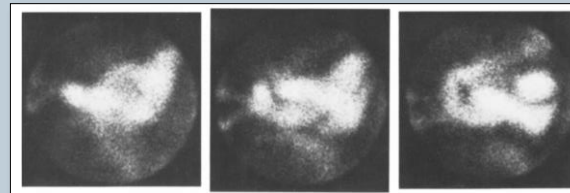
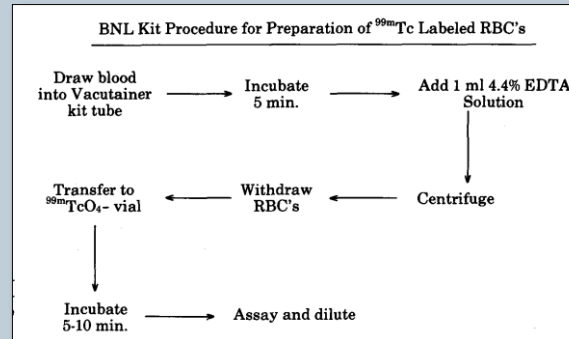


Walter Tucker and Powell Richards

Tc-99m Generator



Development



Labeled Red Blood Cells

Market



Used for blood pool imaging, including cardiac first pass and gated equilibrium imaging and for detection of sites of gastrointestinal bleeding

Other medical applications include:

- Bone scan
- Functional brain imaging
- Immunoscintigraphy
- Pyrophosphate for heart damage

Entrepreneurial Training

- Foundation necessary to perform preliminary evaluation of product and product enhancement ideas
- Training in customer discover and pitch development

Thank you!!