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# Development of Computational Biology at Howard University

# The Starting Ingredients ...1989/1990

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- Scientific Motivation
- One Workstation/software
- Acquired Expertise

# Initial Growth ....

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- Productive Use of Available Resources
- Increase Awareness of Activities in Howard Community
- Continual efforts to attract support

# A Defining Moment ....1995-1996

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- HU received its initial RCMI support for computational biology resources
- Resulted in significantly increased capability



Hardware



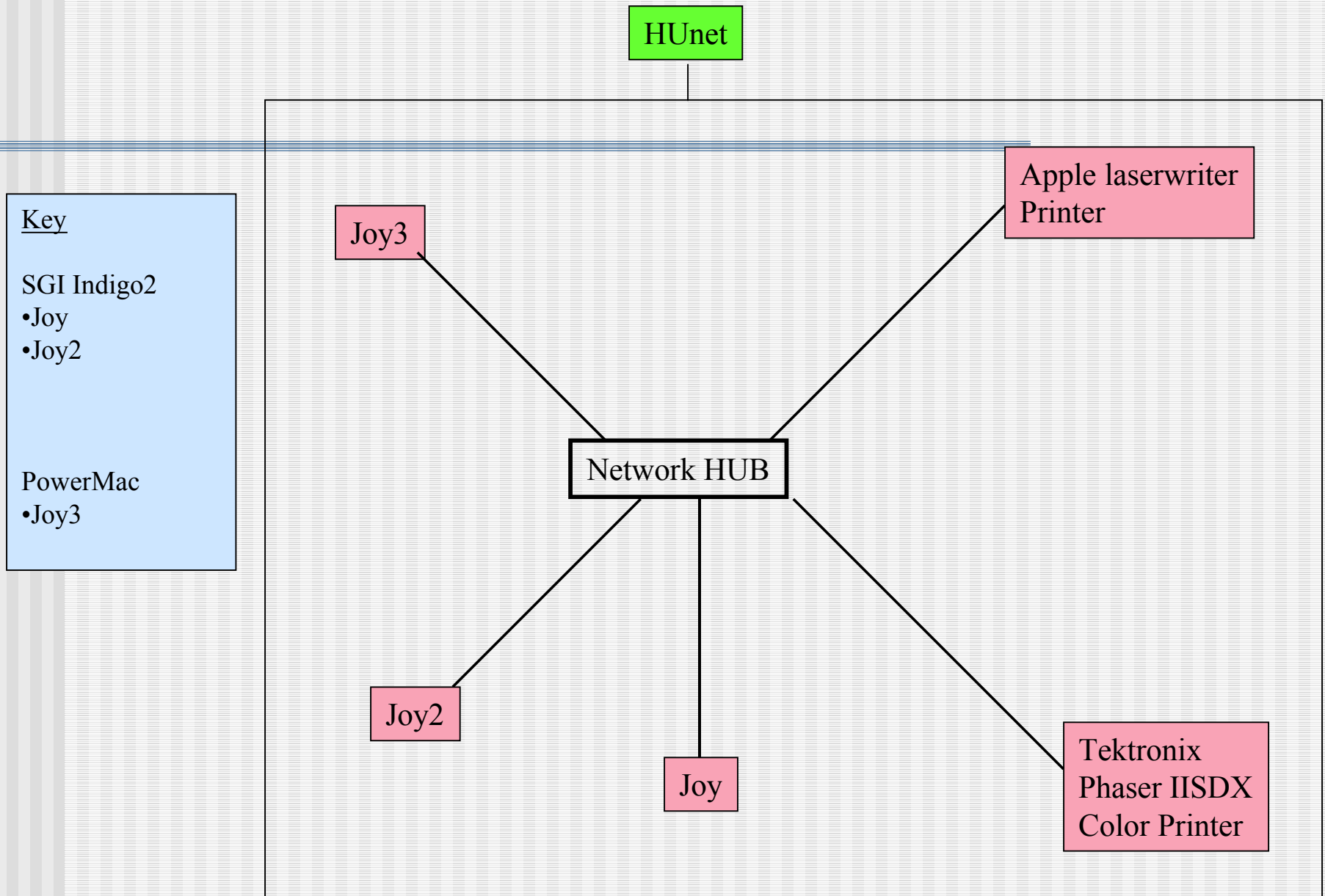
Software



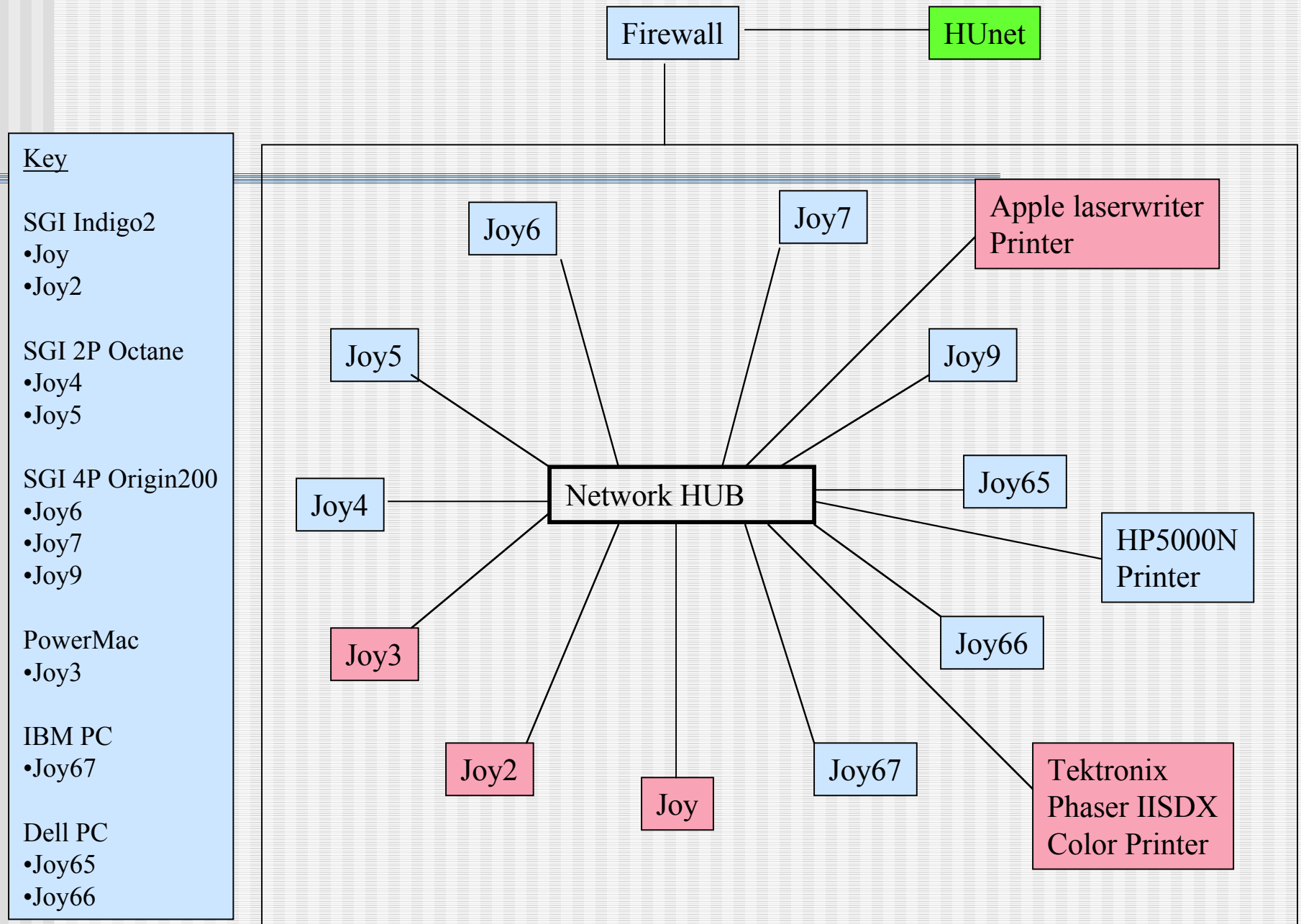
Personnel

“This support provided a platform for computational biology research that could impact the University.”

# Computational Biology Hardware Resources-Before



# Computational Biology Hardware Resources- After



# Current Status ....2001/2002

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- Molecular Modeling/Molecular Dynamics Research
- Gene Sequence Analysis
- Protein Sequence Analysis

# Important Keys to Growth....

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## ■ Scientific Versatility ..

Must continually evolve to provide the resources required by the user community.

## ■ Convenience ...

Must continually evolve to insure ease of access and usability to the community of users. For example.. Remote access via fast connection methods, and knowledgeable staff to assist users.

# Projections ....2002 and beyond

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## Scientific Projections.....

- Add computational Quantum Chemistry
- Computational QSAR
- Method Development Activities...

## Resource Projections ...

- Highly paralleled processing (lobos)  
(Dept. of Systems & Computer Science)

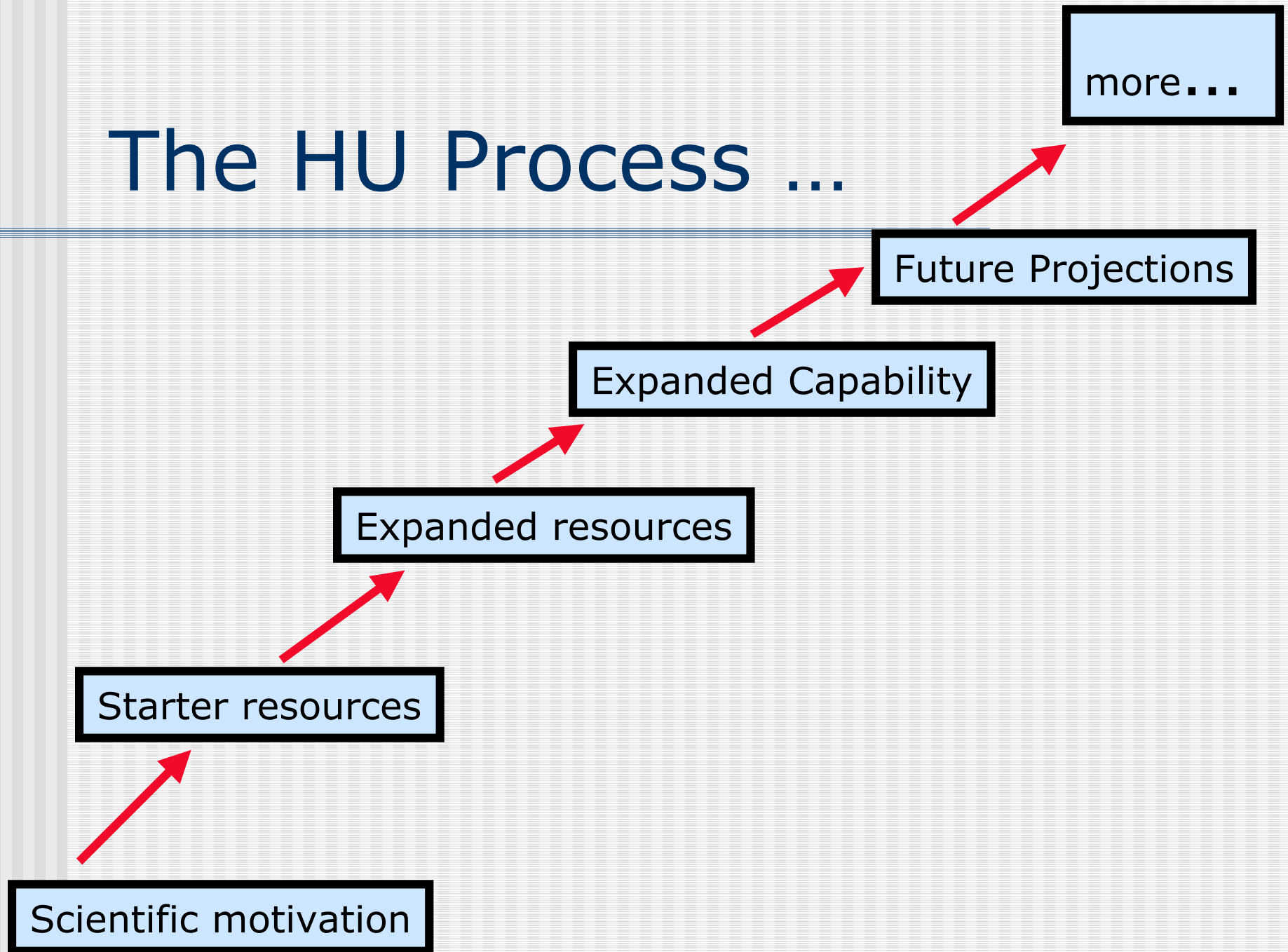
# Continuance of the Core ...

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- Service Contracts ...
- Hardware Upgrades ...
- Personnel ...

Must develop avenues/plans to keep the core current in these essential Components.

# The HU Process ...



# Methods Available ....

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- Molecular Modeling/Dynamics
- Database Searching/Sequence Comparisons/Sequence Pattern Searches
- Method Development....

# Examples of Computational Biology Activities .....

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## Molecular Design

- Structure Based Ligand Design
- Protein Design

## Bioinformatics

- Gene Sequence Analysis
- Protein Sequence Analysis