

Introducing the Nucleic Acids Research Group (NARG)

We would like to introduce you to the Nucleic Acids Research Group (NARG) and outline past studies. We hope to encourage participation in future studies and increase interest in membership.

Current Membership

NARG member

Tony Yeung (chair)	Fox Chase Cancer Center
Greg Buck	Virginia Commonwealth University
Martha Gunthorpe	HHMI at UC San Francisco
Brian Holloway	NCID/CDC
Kathy Mills	Millennium Pharmaceuticals Inc.
Stephen Scaringe	Dharmacon Research, Inc.

Ad hoc members

Kathryn Lilley (MARG)	University of Cambridge
Pamela Scott Adams (FARG)	Trudeau Institute
Ted Thannhauser ("ex"DSRG/EB)	Cornell University
Susan Hardin (new EB liason)	University of Houston

NARG Mission Statement

- To examine current trends of oligonucleotide-based technologies and synthesis chemistries
- To facilitate the use of oligonucleotide-based technologies in research
- To assist member laboratories in self-evaluation and growth
- To promote, encourage, and recognize excellence in member laboratories

Our History

1991 - NARG established
 1993 - Core facility survey
 1995 - Accuracy of automated DNA sequencing
 - DSRG established
 1996 - Synthesis of a primer, CE analysis and use as sequencing primer
 1997 - Sequencing primer design
 1999 - Core facility survey
 2000 - Modified primer study (internal)
 2001 - Survey and homopolymer study

Membership

1. Monthly conference calls
2. Participation
 - Intellectual: ideas and methods
 - Activities: this is up to you and also what you can offer at the time

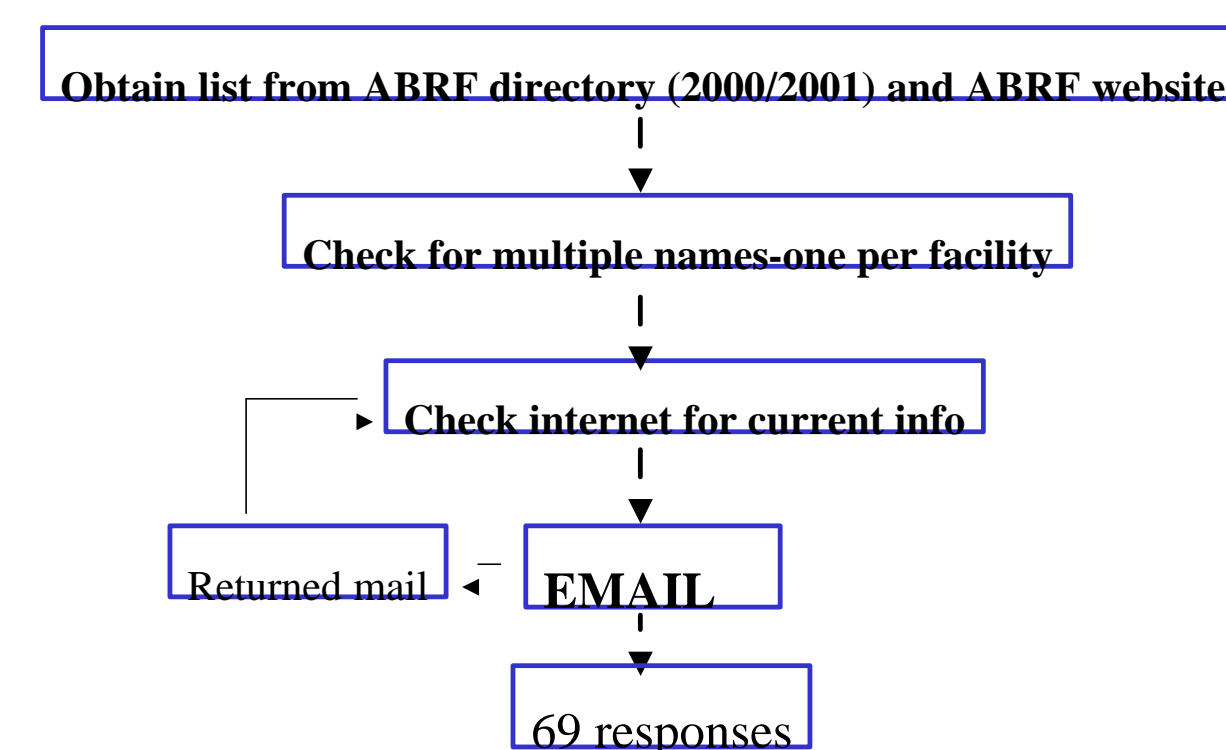
Interested?

Email Tony Yeung: at_yeung@fcc.edu

NARG 2002 Mini-Survey

In 2001, the Nucleic Acids Research Group sent a brief email survey to all the ABRF laboratories that listed DNA synthesis as a service in the 2001 ABRF directory. By doing so, we created a network that facilitates information exchange on nucleic acid synthesis and quality control. Additionally, we enlisted interested members to experiment with new synthesis chemistries. After directly contacting members who listed DNA synthesis as a service, we asked them why they felt that member participation in NARG studies and service has been decreasing in recent years. We also asked these members to speculate on the fate and future of DNA services in core facilities.

Methods:



Results:

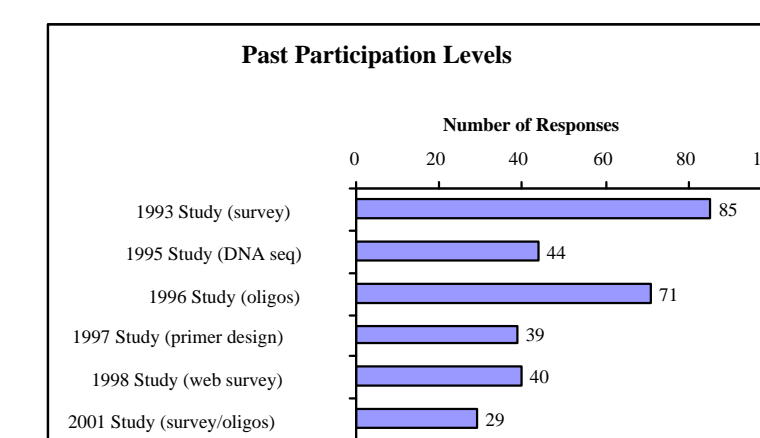


Chart 1: Participation levels from previous studies conducted by the NARG.

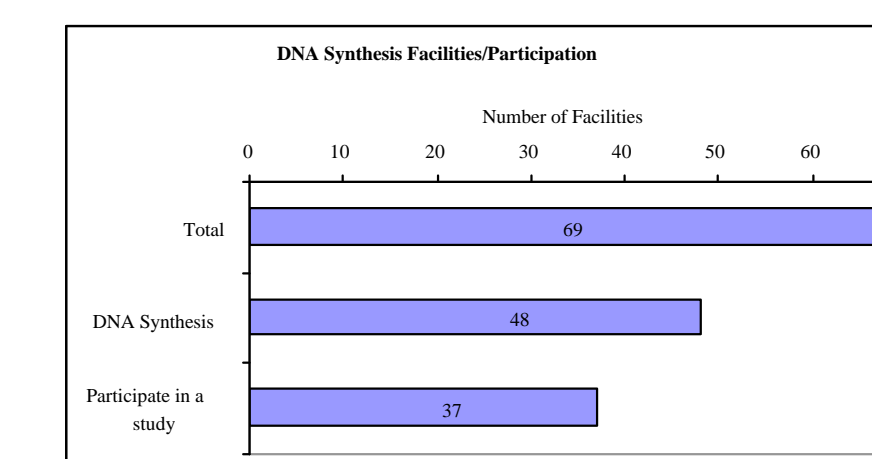


Chart 2: DNA synthesis facilities continue to exist despite the doom and gloom of tough competition. Participation in NARG studies is lowered due to time and resource constraints.

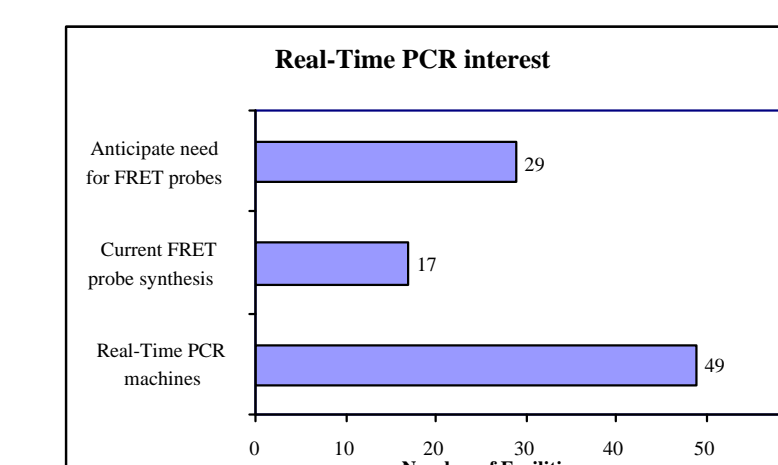


Chart 3: Most all of the institutions invested in Real-Time PCR instrumentation. A small percentage of the responding facilities synthesize FRET probes (fluorescent resonance energy transfer); However, there is anticipation of an increase in requests for synthesis of FRET probes in the future.

Questions in Mini-survey

1. Is your lab still synthesizing oligonucleotides? If no, why not?
2. Do you currently synthesize FRET probes (fluorescence Resonance Energy Transfer: Taqman, Molecular Beacons, etc.)?
3. Are there real time PCR machines at your institute?
4. Do you anticipate the need to synthesize these types of probes within the next year?
5. Would you be willing to participate in our study for 2002?
6. Are you interested in serving as a member of NARG?

Comments on continuing DNA synthesis

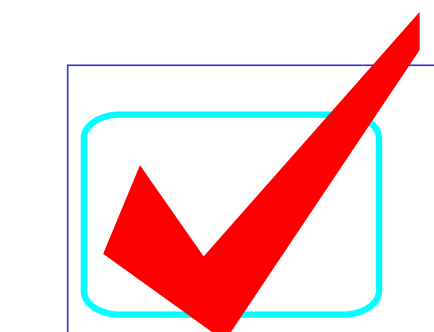
"We refuse to give in to custom houses! We are also our largest oligo user for DNA sequencing projects, so its much more convenient to make them ourselves."
 "Yes, we are [synthesizing oligos] and business was never better. I'm looking for another instrument."
 "Yes, Just purchased a high throughput MerMade IV synthesizer (2x96-well plates)."
 "Yes-right now oligos are our best service and growing."
 Commercial facility: 500,000 oligos/year
 "Yes, we still make oligos although our volume has been decreasing since 1999, after a peak that year :Oligos made= 2362 in 1999 and 2044 in 2000..."
 "Yes, barely, but probably not for long. We can't compete with prices for normal oligos. We are only cheaper for batches of unusual oligos."
Summary of "No" responses: not price or time effective compared to commercial sources, limited space, not enough personnel,old equipment and new equipment expensive, priorities changed,no hazardous chemicals, service contracts expensive,and post-synthesis work for current high-throughput instruments labor intensive.

Comments about the NARG

"...I enjoyed the presentation of the results [NARG 2001 study] in San Diego..."
 "It is a group that I have gotten a lot of useful info from, though, and someday I'd like to pay that back."
 "[NARG 2001 study] "...displayed our results in a notebook in the lab for our users to see."
 "...The information from such studies [NARG 2001 study] have been extremely valuable to me in the past."

Conclusions:

1. DNA synthesis facilities continue to exist.
2. Participation levels do not reflect the number of existing facilities.
3. Real-time PCR instruments are prevalent and interest in synthesizing FRET probes is expected to increase.
4. Still several "no responses" from verified addresses.



Announcements:

2. Attend the Research Group Presentation! (R6)
 - Time: Monday, March 11 4:00-5:00 pm WEDGWOOD
 - Agenda
 1. More information about the NARG
 2. NARG 2002 Mini-Survey Results by Martha Gunthorpe
 3. Open Discussion-Audience
 4. High-throughput Oligonucleotide Synthesis: Linker Phosphoramidite Reagents and Tandem Synthesis by Richard T. Pon (also presented in a poster, XX)
- Check out Tutorial Session 5: Synthesis of Real Time PCR Probes
 - Time: Monday, March 11 5:10-6:10 pm
 - GRAND BALLROOM A

