Vermont Genetics Network
IDeA Networ s of Biomedical Research Excellence
National Center for Research Resources
FALL 2007
NEWSLETTER

# Vermont Genetics Network Hosts the 2nd Northeast Regional IDeA Meeting August 15-17, 2007

The 2nd Northeast Regional IDeA Meeting brought over 200 scientists to Burlington, VT to facilitate open interaction and networking aimed at initiating future collaborations and new discoveries. The three-day meeting, which took place August 15 17, at the Sheraton Hotel and Conference Center, included members of the NCRR/NIH INBRE and COBRE programs from Delaware, Maine, New Hampshire, Rhode Island and Vermont.

*Dr. Judith Van Houten served as Master of Ceremonies.*

*Dr. Frances Carr, UVM VP for Research and Graduate Studies, welcomed the participants.*

*Dr. Sidney McNairy, Director of Research Infrastructure, NCRR/NIH, gave an inspirational presentation.*

*Dr. James Battey, Director of the NIDCD, NIH, delivered a provocative and informative keynote speech.*

The Wednesday evening opening session began with networking and a buffet dinner. Dr. Judith Van Houten, Principal Investigator of the Vermont Genetics Network INBRE, served as Master of Ceremonies and welcomed the participants. The meeting officially began with welcoming remarks from Dr. Frances Carr, VP for Research and Graduate Studies, UVM. She then introduced Dr. Sidney McNairy, Director of Research Infrastructure at the NIH, who delivered an inspirational presentation about the impact of the INBRE and COBRE programs in the IDeA states. The evening concluded with a provocative and informative keynote speech titled The Promise and Challenge of Stem Cell Research by guest speaker James Battey, MD, PhD, Director of the National Institute on Deafness and Other Communication Disorders (NIDCD).

UVM President Daniel Mark Fogel opened the meeting on Thursday morning, August 16 by thanking the participants for their commitment to science research. The conference participants then heard remarks from Vermont Governor Jim Douglas, who spoke about the impact of the INBRE and COBRE programs and the overall importance of science education in the state of Vermont. W. Fred Taylor, PhD, IDeA Program Director at NIH gave a presentation describing the IDeA Program goals and objectives.

Platform sessions, featuring thirty-five scientific presentations by researchers in the fields of Protein Structure/Function, Inflammation and Immunology, Computational Biology, Stem Cells, Neuroscience, Development and Regeneration and Cancer Biology, were conducted throughout the remainder of the conference. Please visit the VGN website (http://www.uvm.edu/~vgn/) for a listing of the Platform sessions.

*UVM President Daniel Mark Fogel opened the meeting on Thursday morning.*

*Governor Jim Douglas talked about the impact of science education in VT.*

*Dr. Fred Taylor, IDeA Program Director, NCRR/NIH, talked about IDeA program goals.*

*Jessica Malow, Coalition of EPSCoR States and Jim Hoehn, EPSCoR/IDEA Coalition talked about the role of EPSCoR in supporting IDeA research.*

Following a buffet lunch, Jessica Malow of the Coalition of EPSCoR/IDeA States and Jim Hoehn of the EPSCoR/IDeA Foundation gave a presentation providing a view of the role of EPSCoR in supporting IDeA researchers.

In addition to the PowerPoint presentations, over 90 research posters were displayed by scientists and Core Facility Directors from the region in an afternoon poster session.

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***We would like to thank the following for serving as Platform Chairs:***

Dr. Abraham Bramie Lenhoff
*Protein Structure/Function*

Dr. William Green
*Inflammation and Immunology*

Dr. Karl Steiner
*Computational Biology*

Dr. Vincent Falanga
*Stem Cells*

Dr. Rodney Parsons
*Neuroscience*

Dr. Don Wojchowski
*Development and Regeneration*

Dr. Alan Howe
*Cancer Biology*

## Vermont Genetics Network (VGN) INBRE

**Director**
*Judith Van Houten, PhD*

**Outreach Core Director**
*Christopher Allen, PhD*

**Bioinformatics Core Director**
*James Vincent, PhD*

**Undergraduate Networking and Professional Development Director**
*Karen Lounsbury, PhD*

**Baccalaureate Partner Institutions & Coordinators**

**Castleton State College**
*Carly Langlais, PhD*

**Johnson State College**
*Elizabeth Dolci, PhD*

**Middlebury College**
*Christopher Watters, PhD*

**Norwich University**
*Edward Carney, PhD*

**Saint Michael's College**
*Doug Green, PhD*

**VGN Staff**

**Program Manager**
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NCRR/NIH Grant #P20 RR16462

# From the Director

*Judith Van Houten, PhD*

I am pleased to give you an update on VGN as we move into our third year of INBRE funding. VGN recently hosted the three-day 2nd Northeast Regional IDeA Meeting here in Burlington on August 15-17, 2007. The conference brought together researchers from COBRE and INBRE programs from Maine, New Hampshire, Rhode Island and Delaware. Representatives from our funding source, NIH, who attended the conference included Dr. Sidney McNairy, Director of Research Infrastructure; Dr. W. Fred Taylor, IDeA Program Director; Dr. Krishan Arora, Health Scientist Administrator; and Dr. Linda Duffy, Scientific Review Administrator. Dr. McNairy addressed the participants on the first evening. The Keynote Speaker (also from NIH), was Dr. James Battey, Director of the National Institute on Deafness and other Communication Diseases (NIDCD), who gave a presentation titled "The Promise and Challenge of Stem Cell Research". To kick off day two of the conference, UVM President Daniel Mark Fogel and Governor Jim Douglas each addressed the crowd. Over 90 posters were presented and over 35 PowerPoint presentations were given. We had many positive responses about the conference and all felt it was not only informative, but a valuable networking experience as well.

The UVM/VGN Proteomics Facility is becoming more established with over 2,000 samples analyzed in the past year. The facility houses two mass spectrometers purchased by VGN and is available to researchers at UVM and our Baccalaureate Partner Institutions (BPI's). Dr. Mark Jennings has been recently appointed to work with Dr. Bin Deng, Proteomics Facility Manager to accommodate the researchers and their particular experiment needs. The Proteomics facility hosted its first Open House on July 31, 2007. In addition, a Proteomics/Bioinformatics interest group has been recently formed and met for the first time in September.

In this year, our year 3 of funding, we provided set up funding to Dr. Stephen Waters, Assistant Professor of Chemistry. Dr. Waters' research addresses the new challenges in organic chemistry through contributions to the areas of synthetic strategy and methods development. He places emphasis on the utilization of these methods toward the total synthesis of natural products having reported biological activity.

Our Outreach Program has geared up for the new academic year. The **Outreach Team** has just introduced a first ever Bioinformatics outreach module to students and faculty at Green Mountain College. Other scheduled visits for this fall include Norwich University. Our Networking and Professional Development director is currently organizing **Career Panel Presentations** for our BPI and other colleges in VT, where a variety of professionals in science careers speak with the undergraduates about their career paths and possibilities. The VGN 7th **Annual Career Day** has just been scheduled for April 16, 2008.

Another faculty **Professional Development Seminar** has been scheduled to take place at Middlebury College on January 26, 2008. The topic for the seminar is "How to Write an AREA grant," with Dr. Jill Silva of Union College scheduled to make the presentation. More **Graduate Student Meetings** currently being planned by Dr. Janet Murray. The graduate students are looking forward to the upcoming trip to NIH.

The VGN External Advisory Committee (EAC) made their annual visit to VT to visit with various members of VGN faculty and graduate students. The EAC members are, Chair Dr. Carol Newlon, Dept. of MMG, New Jersey Medical School; Dr. Peter Bruns, VP for Grants and Special Programs, Howard Hughes Medical Institute, and Dr. George Witman, Department of Cell Biology, University of Massachusetts Medical School, In addition, the EAC members traveled to Norwich University to take a tour and meet with members of the Norwich administration and also, VGN funded faculty. The assessment and input from our EAC members is invaluable to the success of VGN.

By the end of November, we will post our next round of Calls for Proposals on the VGN website (http://www.uvm.edu/~vgn/index.php?ContentID=4). Applications will be accepted for faculty project grants, faculty pilot project grants, graduate student assistantships and undergraduate summer research grants.

I want to add a special thanks to our VGN staff for their dedication and talented work. The tremendous success of the Northeast Regional IDeA Meeting is a testament to their excellence.

I wish you all a productive and fulfilling year with VGN.

# Northeast Regional IDeA Meeting

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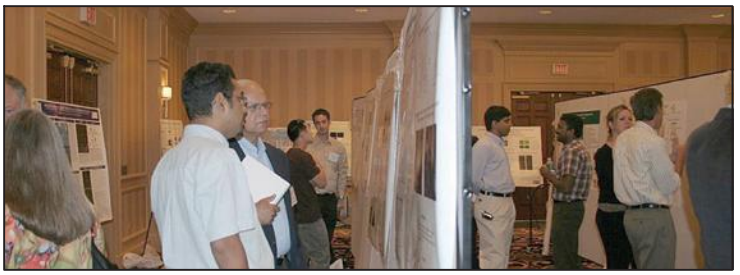
Thursday evening, INBRE and COBRE PI's had the opportunity to meet with officials from NCRR/NIH to discuss their programs. A relaxing, networking dinner followed the day's jam packed agenda.

The third and final day featured the remainder of the platform sessions along with two concurrent meetings; a Core Facility Director's workshop co-moderated by Timothy Hunter and Dr. Brewster Kingham and a Cyber Infrastructure regional workshop moderated by Dr. Karl Steiner.

The conference concluded at noon on Friday, August 17 with a wrap-up session by Dr. Judith Van Houten. Feedback from conference participants has been extremely positive and all were grateful for such a valuable networking opportunity.

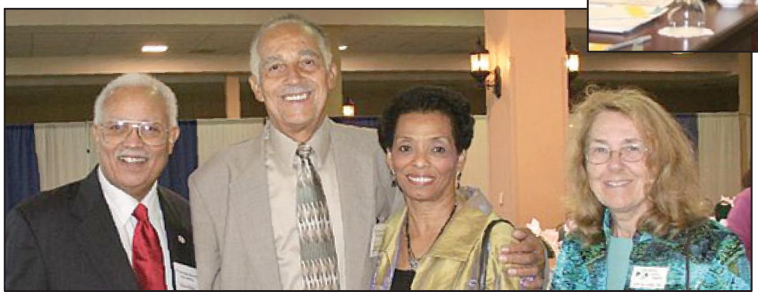
For a listing of all conference participant information and conference photos, please visit the VGN website home page. In addition, a VPR interview with Dr. Battey is included in the conference coverage on the VGN website.



*Over 75 Research Posters were presented.*

*Cyber Infrastructure workshop attendees.*

*Dr. Karl Steiner served as the moderator for the Cyber Infrastructure Workshop.*



*Dr. Sidney McNairy, Dr. Larry McCrorey, Mrs. McNairy and Dr. Judith Van Houten.*

*The poster session was a great networking opportunity.*

*Dr. Judith Van Houten and participants from Norwich University.*


*Core Facilities were represented from the entire northeast region.*

*Dr. Brewster Kingham (L) and Timothy Hunter (R) served as co-moderators of the Core Facility Workshop.*

*Core Facility representatives had a chance to network.*

*Core Facility workshop attendees.*

# Students and Faculty Explore Boston's Research Facilitie

*by Dr. Liz Dolci, BPI Coordinator of Johnson State College*

Undergraduate students and faculty from Norwich University and Johnson State College traveled to Boston last March for a two day exploration of the city's research facilities. The trip, sponsored by the VGN Outreach Core was organized by Dr. Janet Murray and began with a Tuesday afternoon excursion to Boston Museum of Science. Students toured the special exhibition on the life and work of Charles Darwin and had ample opportunity to explore the other exhibits in the museum. After dinner in the Quincy Market area, the group attended a lecture by Dr. Susan Lindquist of the Department of Biology at MIT. The seminar entitled "An unexpected Interface: Protein Folding Driving Evolutionary Change" was part of the Whitehead Institute Series of Public Lectures and was well received by students.

The Vermont group had the opportunity to compare public and private biotech research facilities on Wednesday with visits to the Broad



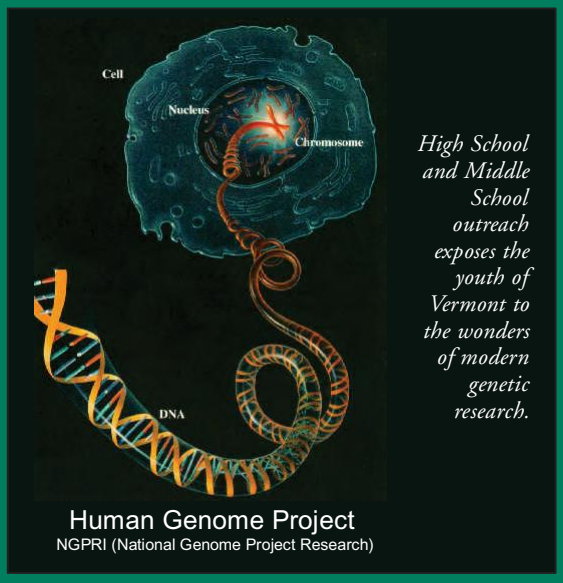
# VGN Outreach at Vermont High Schools and Middle Scho

*by Janet Murray, PhD*

The primary mission of the VGN Outreach Team is to deliver cutting edge technology and information to undergraduate students throughout Vermont. This includes; the Microarray Module that has been delivered to Vermont Colleges since 2003, the Bioinformatics Module beginning outreach delivery this academic year and the Proteomics Module scheduled for beta testing in the fall of 2008.

The goal of these outreach programs is to help create a "pipeline" for undergraduate students in health and research related careers and to enhance the science and technological skill of Vermont work force. These courses are offered primarily to upper level science students interested in a possible future in a health and research career.

The VGN outreach program extends beyond baccalaureate colleges in Vermont. The VGN Microarray Core in conjunction with the VCC DNA facility




*High School and Middle School outreach exposes the youth of Vermont to the wonders of modern genetic research.*

reaches out to High Schools, Middle Schools and even younger groups of children in Vermont. In this way the technology "pipeline" is beginning to be extended. Reaching out to these youngsters creates excitement for science and technology and gives these students a look into the current state and future of scientific research.

There are several types of outreach that have been offered. There are tours of the DNA and Microarray Facilities and seminars with topics such as, "Modern Technologies in Genetic Research", "The Human Genome Project (Where have we been and where are we going?)",

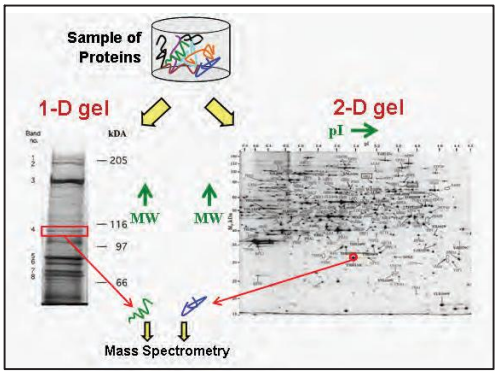
# Meeting Challenges in Proteomics Research

*by Bin Deng, PhD and Dwight E. Matthews, PhD*

The UVM/VGN Proteomics Facility is now one year old. As the facility has grown, we have had a number of successes working with users on their projects. The two main challenges for the facility in the second grant year will be (i) developing techniques to detect low abundance proteins from complex protein mixtures and (ii) developing routine quantitative proteomics methods. In addition, we will continue to improve our capabilities and update instrumentation to better serve users' needs.

The Proteomics Facility has had a very productive year:

- The facility completed analysis of more than 2000 samples from UVM and VGN baccalaureate partner institutions during the past year.
- More than 18 principal investigators and their groups submitted samples for proteomics measurements.
- The facility has provided supportive data for investigator grant proposals.
- One paper was published in the *J Proteome Research* and additional manuscripts have been submitted.
- Facility staff has been active making eight PowerPoint and poster presentations at UVM, the University of Montreal, the COBRE Immunology Division Retreat, the 2nd NE Regional IDeA Meeting, and other meetings.
- The facility hosted a seminar-open house that attracted more than 35 people from UVM, Saint Michael's




*Proteomics can identify a protein needle in a haystack.*

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Institute and the Shire Human Genetic Research Company. Students were impressed by the magnitude of the sequencing initiatives undertaken at the Broad. At the Shire, interest heightened at a session on "orphan drug" development as several students asked probing questions on the science and ethics of such activity. Tours of the laboratories at both the Broad and Shire revealed research facilities not seen at Vermont's baccalaureate institutions.

This VGN-sponsored opportunity enriched the science education of undergraduates. The extended classroom experience exposed students to the vast opportunities that are available in science, and emphasized the importance of integrating science, engineering, and mathematics in preparation for careers in research. Faculty also benefited, as we are responsible for developing the curriculum for science majors. Most notably, the experience reinforced the importance of integrating both state of the art and classical technologies into our teaching.


*The VGN Outreach trip to Boston was highlighted by a visit to the Boston Museum of Science to view the Darwin Exhibit, and tours of both The Broad Institute of Harvard and MIT and the Shire Human Genetic Therapies Biotechnology Company.*

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and "Tools in Our Tool Box" appropriate for students younger than 5th grade level.

Hands on activities have also been offered; for high school students, a "Mini-microarray Experiment" mimicking studies for comparing normal and tumor tissue from lung (donated by Gensphere), or "DNA extraction from Cheek Cells" using common house hold items (parental consent required) and for middle school students, "DNA extraction from living things" (What objects around the classroom have DNA?).

Seminars and hands on lessons have been delivered at Vermont schools or at UVM in conjunction with a tour of the Facility.

In 2006 the outreach core was involved in "DNA Day". The National Human Genome Research Institute (NHGRI) targeted the New England States for the celebration of DNA day in April of 2006. Outreach member and Facility Director Tim Hunter helped to coordinate high school interactions in the area. Outreach team members as well as other individuals at UVM were recruited to act as DNA ambassadors at different high schools in Vermont.

### *Where have we been?*

Over the past few years the VGN outreach program, in conjunction with the VGN Microarray and VCC DNA facilities, has reached out to many schools throughout Vermont listed below by county.

**Addison County**
Poultney High School

**Franklin County**
Enosburg High School
Bellows Free Academy, St. Albans
Bellows Free Academy, Fairfax

**Chittenden County**
Champlain Valley Union High School
Essex High School
Mount Mansfield Union High School
Pine Ridge School
Tuttle Middle School, South Burlington

**Lamoille County**
Stowe High School

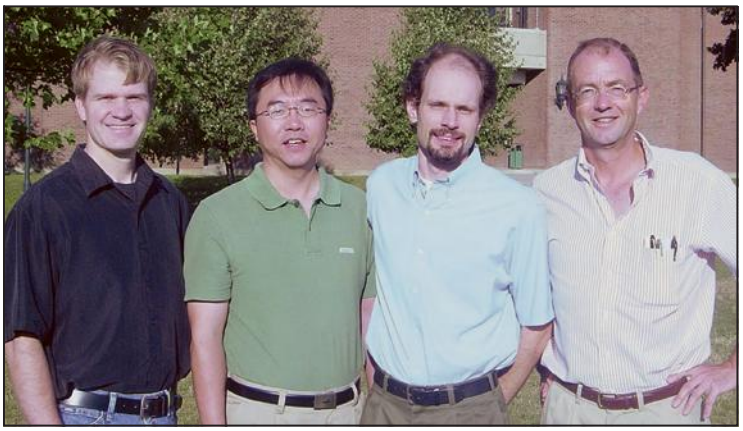
**Washington County**
Harwood Union High School

College, Norwich University and Wellesley College. The mass spectrometry vendors Shimadzu, Thermo-Fisher, Sigma Aldrich and Waters were present at the open house.

- The facility was the one facility, out of 50 applicants to receive a $10K award from the Canary Foundation (http://www.canaryfoundation.org/news_052207_labkey.html), (a non-profit organization geared toward funding the early detection of human cancers,) to support computational proteomics software.

The facility has added new personnel. Dr. Mark Jennings, who earned a PhD in analytical chemistry from the University of Vermont, joined the facility in September, and Dr. Jim Vincent, from the National Cancer Institute (NCI), is now on board serving as the new VGN Bioinformatics Core Director. Bioinformatics support is critical to the processing of proteomics data and Dr. Vincent is currently setting up a server-based bioinformatics analysis system for mass spectrometry data searching. In addition, the VGN outreach team, coordinated by Dr. Janet Murray, has begun working with our baccalaureate partner institutions to build an effective proteomics outreach module.

The Proteomics Facility will continue working hard in the coming year to expand services to researchers at higher educational institutions in Vermont.



*VGN Mass Spectrometry Facility. (L to R) Bryan Balif PhD, Bin Deng PhD, Mark Jennings PhD, Dwight Matthews PhD.*

# VGN Proteomics Facility Open House – July 31, 2007

The UVM/VGN Proteomics Facility hosted an Open House on Tuesday, July 31, 2007 at the University of Vermont. More than 35 people from UVM, Saint Michael's College, Norwich University, Wellesley College, and other institutions attended the event. The day began with registration, refreshments, and displays by vendor-sponsors. The sponsors of the open house included Shimadzu, Sigma Aldrich, Thermo-Fisher, and Waters.

The program began with a welcome from the Vermont Genetics Network (VGN) Director, Dr. Judith Van Houten. Next, Dr. Dwight Matthews, Director of the VGN Proteomics Facility, gave a presentation titled Proteomics at UVM. He introduced the topic of proteomics and provided introductory information how mass spectrometers are used in protein and peptide analysis, and how the mass spectrometry data can be used to make protein identifications.

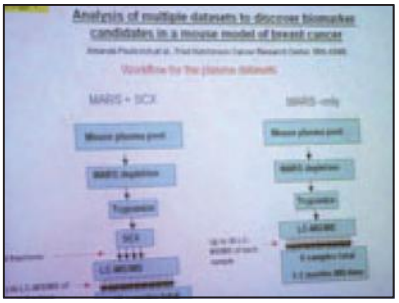
Following Dr. Matthews' presentation, the attendees had a break to visit with the vendor representatives and to network among themselves. After the break, Dr. Bin Deng, VGN Proteomics Facility Manager, gave a presentation titled Hot Topics in Proteomics Research. Highlights from his presentation included recent developments and progress towards biomarker discovery for the early diagnostics of human diseases, phosphoproteins identification, and new instrumentation of mass spectrometers and new technologies in proteomics.

A lunchtime seminar was presented by Shimadzu proteomics specialist, Dr. Rachel Martin. She discussed Shimadzu's latest MALDI-TOF mass spectrometry technology for the biomarker discovery and for tissue imaging.

The Open House concluded with a tour of UVM/VGN Proteomics Facility and instrumentation by Dr. Deng. After the tour Dr. Deng provided a tutorial on the use of proteomics software to attendees interested in learning to use the analysis software to explore results of their data.

The Open House was a successful introduction of the UVM/VGN Proteomics Facility to researchers at UVM, and from other institutions in the state. We thank our corporate sponsors of this event and look forward to next year's Proteomics Open House!

*Dr. Dwight Matthews, Proteomics Core Director, talked about Proteomics at UVM .*




*Dr. Bin Deng, Proteomics Facility Manager, makes a presentation.*

*Registration, refreshments and networking.*

*Dr. Rachel Martin, Shimadzu Proteomics Specialist, speaks to the crowd.*

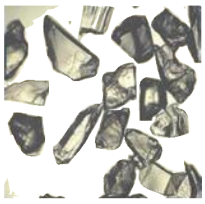
*Dr. Deng gives a tour of the UVM/VGN Proteomics Facility.*

# UVM Microarray Facility Update

*by Tim Hunter and Scott Tighe*

The UVM Microarray Facility continues to provide comprehensive support for global gene expression and mapping studies and has just completed its most productive fiscal year since the inception of the facility in late 2002. 392 GeneChips were processed through the facility for a variety of model organisms including: Human, Rat, Mouse, Drosophila, Yeast, Toxoplasmosis, and Bovine. Many investigators have published their data and have also received new funding through microarray data generated in the facility.


The Facility has experienced an increase in projects working with small recovery targets such as LCM (laser capture microdissected) and FACS (flow analytical cell sorted) derived samples. This has generated the need for a quantification system that can accurately measure small amounts of RNA. The facility has recently upgraded the Agilent 2100 Bioanalyzer system with the new expert software to provide more accurate quantification of targets down to 200pg/ul. The facility has already established a reproducible target preparation for working with as little as 5ng of starting total RNA for GeneChip Analysis and the new capabilities will certainly facilitate these studies.



**Aluminium Oxide**

The microarray facility staff continue to explore ways to reduce cost of the target preparation through testing of products new to the market that are less expensive, but still maintain a high quality endpoint.

Continued need for nucleic acid sample extractions from difficult tissues has necessitated the acquisition of the automated FastPrep 24 system. This system mechanically homogenizes cells and tissues at very high speed with the aide of special abrasives matrices jointly developed by Saint-Gobain Ceramic, Washington Mills ElectroMaterials, and the microarray staff. The materials are a combination of diamond, cubic boron nitride, and $AlO_3$. This was necessary because most bead-based extractors employ silica which will inadvertently bind nucleic acid and significantly reduce recovery. This equipment is now available for use.

# Norwich University Ribbon Cutting Ceremony

*Comments made by Dr. Ed Carney, BPI Coordinator*

On September 6, 2007 the Molecular and Integrative Biology Research Laboratory was dedicated at Norwich University. This dedicated research space was funded by a grant from the Vermont Genetics Network (VGN). The new research lab will provide faculty and students at the University with an opportunity to conduct research on a year round basis in a space where their experiments can remain undisturbed. In the past, research in biology and chemistry has been carried out in undergraduate student laboratories, which during the summer provided adequate space because some of the laboratories were not being utilized for summer school. However, during the academic year, it was a significant challenge to coordinate the multiple uses of the laboratory space. It is anticipated that this new facility will provide five work stations. Two of our VGN researchers were so excited about the new facility that they moved into the space within hours of receiving word that a certificate of occupancy had been granted.

*Norwich University President Richard Schneider, RADM, USCGR (Ret.), VGN funded Norwich University Student Timothy Blood and VGN Director Dr. Judith Van Houten prepare for the Ribbon Cutting ceremony.*

During this third year of VGN funding, Norwich received $104,000 to convert the former supply/ prep room into a research laboratory. There are currently six Norwich faculty and two undergraduates receiving VGN funds. Three of the six faculty members have funding that includes release time to continue their research during the academic year. Four of the VGN researchers have funds to employ Norwich students as research assistants, an experience that has paid dividends in terms of their post graduate career opportunities especially in areas in which their acquired molecular biology skills and experience are being utilized. The goal of the VGN to enhance the culture of research at Norwich University and support ways to perpetuate it, complements the goals set forth in the Universities 2019 Document which looks to the future of this great Institution.

In addition to renovation funding, VGN has also contributed to Norwich by providing our researchers and students with cutting edge instrumentation, some of which include a retinal scanner, EEG device for measuring brain waves, a gas chromatograph, gel reader nanodrop instrument for measuring minute quantities of DNA, and an environmental growth chamber. All of the equipment is utilized by both faculty and student researchers.

Through their outreach program, VGN has provided opportunities for our faculty and students to have hands on experience with cutting edge technology in the area of gene expression using microarrays. The microarray workshop, complete with equipment, supplies and instructors from VGN was first presented in the fall of 2005 with great success. It will be repeated at Norwich this fall. In the spring of 08, VGN will present a Bioinformatics outreach module.

VGN also provides off campus field trip experiences for our faculty and students, one of which included a personal tour of the Darwin exhibit at the Museum of Natural History in New York City and a tour of their new state of the art genomics and tissue preservation facilities.

Because Norwich is a partner in the Vermont Genetics Network, faculty and students researchers have access to expertise and facilities at the University of Vermont, which they have utilized with increasing frequency. This collaborative association has provided an outstanding networking opportunity for both faculty and students researchers on a year round basis. It is important to highlight the contributions made by VGN to the University, its faculty and students while not trying to over shadow the importance of this dedication or the substantial financial contribution Norwich University makes annually through its Faculty Development and Undergraduate Research programs to enhance the academic and research goals of the University.

Some of those in attendance at the ribbon cutting ceremony included: Norwich University President Dr. Richard Schneider, VGN Director Dr. Judith Van Houten, Dom Reggerio, Chair of the Board of Fellows, Dr. Bjong Wolf Yeigh, Vice President for Academic Affairs, Dr. Joseph Byrne, Associate Vice President for Academic Affairs, Dr. David Westerman, Associate Vice President for Research, Professor Cathy Frey, Dean of the School of Mathematics and Sciences, Professor Eduardo Hernandez, Chair of the Biology and Life sciences Department, Members of the visiting team of the Board of Fellows, VGN researchers and mentors, faculty and student guests.

# Meet the new Bioinformatics Core Director

**James Vincent**, Research Assistant Professor of Biology, is the new director of the Bioinformatics Core for the Vermont Genetics Network (VGN). As director of the Bioinformatics Core, Dr. Vincent will help integrate the proteomics and microarray facilities into the research programs of members of the Vermont Genetics Network.

*Dr. James Vincent*

An initial goal of the core is to develop tools and workflows that enable bench scientists to overcome the time consuming and often frustrating work of combining disparate information sources with their own experimental data. The initial focus will be on proteomics tools for mass spectrometry data.

The bioinformatics core is tightly integrated with the Vermont Advanced Computing Center (VACC). The VACC will provide all computational services for the core as well as visualization abilities through the new VACC Visualization Laboratory located in Farrell Hall.

Dr. Vincent received a BS in Chemistry and a BS in Computer Science from the University of Vermont. He earned his doctoral degree in Computational Chemistry from the Pennsylvania State University under a National Science Foundation fellowship in high performance computing.

Prior to joining VGN, he completed three years of postdoctoral training at the National Cancer Institute (NCI), National Institutes of Health before accepting a position as Staff Scientist in the Bioinformatics and Molecular Modeling Section of the Laboratory of Molecular Biology, NCI.

# A new round of Requests for Applications for year 2008-2009 will be available on the VGN website soon!

***For Baccalaureate Partner Institutions:***

Faculty Project Grants
Faculty Pilot Project Grants
Undergraduate Student Summer Research Grants

***For UVM:***

Graduate Student Assistantships

*To apply, visit the VGN website at* http://www.uvm.edu/~vgn/index.php?ContentID=4
*For more information, contact the VGN office at* Vermont.GeneticsNetwork@uvm.edu

## *Mark your Calendars!*

7th Annual
**VGN Undergraduate Career Day**

**April 16, 2008**

DoubleTree Hotel
1117 Williston Road
South Burlington, VT 05403

***Now Available...***

## Regional Core Facility Database!

*To find out information about existing core facilities, not only at the University of Vermont, but in the northeast region, please visit the VGN website at:*

http://www.uvm.edu/~vgn/index.php?ContentID=74.

*If you would like information about your facility to be included in the database, there is a link to add all required information.*

*Feel free to link this valuable tool to your own website.*

National Center for Research Resources

Return Service Requested

University of Vermont
120A Marsh Life Science Building
Burlington, Vermont 05405-0086

Vermont Genetics Network
VGN