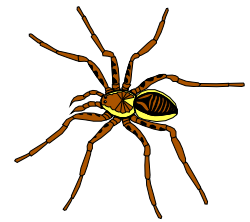




# Cobwebs



Spring 2003 - Volume 7

A Newsletter for Alumni in Biology, Natural Resources Management, Environmental Science,  
Planning and Resource Management and Group Science

## Alice and the Red Queen

Shaily Menon, Biology Dept. Acting Chair

What, you might wonder, could Alice and the Red Queen have to do with Biology? Let me explain.

As I sat before a blank computer screen, the past three issues of Cobwebs spread around my desk for inspiration, I found myself inadequate to the task, acutely wanting of chicken stories or woodchuck stories. I considered the themes that have dominated the Biology department over the past year and my mind kept returning to one theme - that of change.



I thought about all the major, and sometimes overwhelming, changes we've undergone. I recalled the saying that you cannot cross a twenty-foot chasm with two ten-foot leaps. Then, in a train of thought more germane to Biology, I remembered Alice and the Red Queen at the top of the hill in "Through the Looking Glass." Alice is running after the Red Queen who is running faster and faster. No matter how fast they run neither appears to move. The Red Queen informs a bewildered Alice that "it takes all the running you can do, to keep in the same place. If you want to go somewhere else, you must run at least twice as fast as that!"

### *...you cannot cross a twenty-foot chasm with two ten-foot leaps*

The Red Queen Hypothesis in evolutionary theory is named after this curious phenomenon. Just as Alice must run to stay in the same place so must species change, evolve, and co-evolve in response to a dynamic environment, which includes individuals of the same species and other species. In the absence of change, species might become extinct.

In keeping with the spirit of the Red Queen hypothesis, we here in the Biology department have continued to change in order to maintain excellence in learning. We serve a larger number of students and at the same time offer them a wider diversity of courses. Let me describe for you just a handful of the ways in which the Biology department is encountering and embracing change:

- 1) Our M.S. in Biology program will be implemented in Fall 2003. We have a number of applications from potential graduate students and are currently going through the selection process. Several new graduate courses have been proposed to meet the needs of our graduate students.
- 2) We hired five more faculty members who will begin in Fall 2003 bringing the total number of tenure-track faculty in the department to 34. These new faculty members and their areas of teaching and research interest are: Regina McClinton and Margaret Dietrich (Cellular and

Molecular Biology), Heather Rueth (Terrestrial Ecosystem Ecology), Chris Dobson (Science Education), and Gary Greer (Botany). We welcome the new faculty and look forward to working with them.

3) With the renovation of Henry Hall this summer, the Biology department space will enlarge to include two new teaching labs, a research lab, a seminar room, and a bigger department office. In addition, several faculty offices will be located in the second and third floors of Henry Hall.

4) Finally, Karel Rogers was on sabbatical this winter and I served as acting unit head for one semester. Karel enjoyed her stress-free sabbatical so much that she has decided to return to us as a regular faculty member instead. We are in the process of holding elections to fill her position as chair.

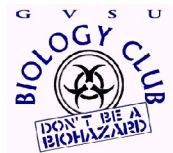
We appreciate the opportunity to update you through this newsletter and we hope that you, in turn, will stay in touch with us.

## β β β and Biology Club News

By Nicole Dafoe, President

The Biology Club has had another busy year providing students with exciting activities in an effort to bring biology out of the classroom. We began the fall semester with a successful Ravine cleanup followed by a fun Halloween hayride. Throughout the year we have hosted several guest speakers including Outstanding GVSU Alumni, Keri Konarska, and Dr. Troy Giambernardi from the Van Andel Research Institute. After our weekly meetings, we have also begun offering tutoring to students who are interested in extra help with their beginning biology courses.

There was a packed bus for this year's annual Chicago trip making it a great success and we also traveled to the Fredrick Meijer Gardens to visit the butterflies. With the continued



participation of the students and support from faculty, we are anticipating a great upcoming school year.

**2002/2003 Biology Club Officers:** Nicole Dafoe, president; Kevin Dondzila, vice president; Donna Stevens, treasurer; Tamara Waters, secretary; Mark Staves; faculty advisor.

## Soil and Water Conservation Society

### News — By Neil MacDonald, Advisor



This year's officers include Stephanie Januchowski (President), Kelly Hoffman (Vice President), Creela Overton (Treasurer), and Robin Johnson (Secretary). Fall, 2002 activities included the M-45 Highway clean-up and a project to sample and identify macroinvertebrates in Sand Creek. Results of the macroinvertebrate

survey are being used by the Sand Creek Watershed Committee to help evaluate current water quality conditions in this stream as part of the development of a watershed project.

During the winter, 2003 semester, we hosted a presentation by John Legge, West Michigan Conservation Director for the Nature Conservancy. John spoke about some of the projects that the Nature Conservancy is active in and talked about opportunities for students to become involved as interns or employees.

Creela Overton was awarded the 2002 Soil and Water Conservation Society scholarship by the Michigan state chapter of the society, so we are both pleased and proud that she was recognized in this way.

SWCS activities planned for the end of the semester include helping with the GVSU Science Olympiad, participating in another adopt-a-stream project in April, and ending the semester with the traditional highway clean-up. As usual, we also enjoy impromptu pizza lunches, social outings, and the annual t-shirt design contest.

## Grand Valley Vet Club

### By Ben Weaver, President

The year began with a bang; new hopes and goals cover the horizon for the Vet Club. With the addition of at least ten new members the club is entering a new involvement in GVSU's student life. We started the year with a bake sale in Kirkhof to help support the club's financial needs. Shortly into the winter semester we were able to visit a local dairy farm and assist with the milking and feeding processes; this gave our members a chance to get hands-on experience in the field of large-animal veterinary medicine. To help spread the knowledge of Grand Valley's biology programs, the vet club participated in a Pre-Health Professions conference, which catered to high school and college students. We listened to Professor Brian Curry discuss the merits of St. George's University School of Veterinary Medicine in Grenada. To assist the club members in choosing a school for veterinary medicine the club also made its annual trek to Michigan State to attend the annual Vet-A-Visit. This is the day when Michigan State University's College of Veterinary Medicine opens its facility to interested students.



Overall, the pre-vet club is growing and is looking forward to welcoming new members for next year. For more information, you can reach us through our website at:

[www2.gvsu.edu/~pre-vet/index.html](http://www2.gvsu.edu/~pre-vet/index.html).

**2002/2003 Vet Club Officers:** Ben Weaver, president; Amber McPherson, vice-president; Lesley Archer, secretary; Barbara Brown, Treasurer; Terry Trier, advisor.

## Student Scholarship Day 2002

Thirty-three Biology and Natural Resources Management Students presented their Research at Student Scholarship Day in 2002. Students from the biology department participated in GVSU's student scholarship day in April 2002, contributing 33 presentations of their research in fields from cell biology to ecology to natural resources management. Below is a list of student who participated in student scholarship day and their faculty sponsors.

**Melissa Allor.** Developing a Wildlife Plan to Obtain National Wildlife Federation Certification. Sponsor: Carol Griffin

**Daniel Hastings.** The Forensic Process: A Case Study. Sponsor: Nancy Shontz

**Nathan Adams.** Analysis of Land Use and Cover Changes in Grandville, Michigan. Sponsor: Shaily Menon

**Rebecca Roosien.** Comparison of Microbial Growth in Filtered, Well, and City Water. Sponsor: Rod Morgan

**Brandon Lesser.** Development and Characterization of an Ovarian Tissue Array. Sponsor: Patrick Thorpe

**Kisha Thomas-Bostic.** Novel Glutathione Gene in Soybean Responds to Aluminum Toxicity in Soil. Sponsor: Lowry Stephenson

**Therese Ruth.** Investigation of a Soybean Gene from a Sink-Limited Soybean cDNA Library. Sponsor: Lowry Stephenson

**Michael Poulos.** Samarium Mutagenesis of *Saccharomyces cerevisiae* Mitochondrial DNA. Sponsor: Patrick Thorpe

**Mindy Knoper, Erin Stark, and Jessica Williams.** Isolation of Photoplasts From Leaves of *Chrysanthemum*. Sponsor: Sheila Blackman



**Erin Davis, Jessica Demeuse, Kati Smith.** Proposal to Explore Frog Biology in Mananara Nord. Sponsor: Stephen Burton and Karel Rogers

**Ryan Frisch.** The Identification of a Novel *Pseudomonas tolaasii* Bacteria, Which Produces a Potentially Antiangiogenic Product, Using 16s Ribosomal RNA Sequences Analysis. Sponsor: Rod Morgan

**Jason Nolan.** Analysis of Wildfires at Yellowstone National Park in 1988. Sponsor: Shaily Menon

**Nikki MacDonald.** Attitudes of the Residents of the Rogue River Watershed. Sponsor: Carol Griffin

**Nicole DaFoe and Gretchen Thelen.** What's NOT on the Ingredients Label: Genetically Modified Ingredients in Common Foods. Sponsor: Sheila Blackman

**Kimberly Barnes, Katherine Hefferon, Nathan Lavoy, and Kristie Reyers.** Transfomation of *Chrysanthemum* leaves with *Agrobacterium tumefaciens*. Sponsor: Sheila BLackman

**Scott Kettlewell, Kenny Nguyen, and Matthew Strutz.** Development of Salt Tolerant Cell Lines of Tabacco (*Nicotanum tabacum*). Sponsor: Sheila Blackman

**Dave Miller.** An Analysis of Growth and Impervious Surface at GVSU, Allendale. Sponsor: Shaily Menon

**Jason Nolan.** Digital Map Development for Blandford Nature Center. Sponsor: Carol Griffin

**Stacy Kimble.** Erosion Assessment at Bass River Recreation Area. Sponsor: Carol Griffin

**Casie Summerfield.** Biology of a Michigan Endangered Species: Distribution and Host Plant Use of the Great Plains Spittlebug, *Lepyronia gibbosa* (Homoptera: Cereopidae). Sponsor: James Dunn

**Brian Sikkema and Matthew Timmer.** Lack of homing ability in House Sparrows. Sponsor: Michael Lombardo and Patrick Thorpe

**Carrie Dean.** Bliss Creek Watershed Survey and Stream Bank Stabilization Alternatives. Sponsor: Carol Griffin

**Robert Sanders.** Improvement of Whitetail Deer Habitat on Private Land in Northwest Michigan. Sponsor: Carol Griffin

**Dave Miller.** Environmental Impacts of Storm Water runoff at GVSU, Allendale. Sponsor: Carol Griffin

**Mindy Mazurek.** Assessment of Moth Diversity and Richness Across Habitat Types at Pierce Cedar Creek Institute. Sponsor: Joe Jaquot

**Adam De Shano.** Stream Bank Restoration on the White River, White Cloud, MI. Sponsor: Carol Griffin

**Robin Johnson.** Rehabilitating Problem Areas on Muskegon State Park Trails. Sponsor: Carol Griffin

**Brian Hanson.** Designation of Wilderness and its Effects on a Dune Ecosystem. Sponsor: Shaily Menon

**Mike Buth.** Evaluating the Representative Reach Component of Rapid Bioassessment Protocol: Variation Among Candidate Stream Reaches. Sponsor: James Dunn

**Nikki MacDonald.** The Wilderness Message: United States Forest Service Website Content Analysis. Sponsor: Carol Griffin

**Matt Vanden Heuvel.** Landscape Elements Associated With Deer-Vehicle Collisions in Michigan. Sponsor: Stephen Burton and Joe Jaquot

**Brian Hanson.** Land Cover Change and the Effects on Whitetail Deer Corridors. Sponsor: Carol Griffin

**Ryan Grant.** Surface Water Investigation of Ruddiman Creek. Sponsor: Carol Griffin



*The seed is a complete, independent bud; it has the nutriment of the young plant within itself, as the egg holds several good lunches for the young chick. When the spider, or the wasp, or the carpenter bee, or the sand hornet lays an egg in a cell, and deposits food near it for the young when hatched, it does just what nature does in every kernel of corn or wheat, or bean, or nut.*

*John Burroughs, Signs and Seasons*

## New faculty



### Dr. Bruce Ostrow

Dr. Ostrow is a developmental biologist who comes to GVSU after teaching for four years at Oxford College of Emory

University. At GVSU he teaches Embryology, Cell and Molecular Biology, Human Genetics, and Introductory Biology. He received a B.A. in Marine Biology from Boston University and a Ph.D. in Cell and Molecular Biology from Northwestern University. He suffered a bout of postdoctoral training at the Fred Hutchinson Cancer Research Center in Seattle while teaching at various community colleges in the Seattle area. His current research interests focus on genetic control of morphogenesis using the fruit fly *Drosophila*. In his "spare time" he is a hammock tester and plays with his two little kids.

### Dr. Eric Snyder

I have a broad interest in aquatic ecology, but have specific training and research experience in stream ecology. My PhD and post-doctoral training were



Eric, Maryanne & Meggie

conducted in the Pacific Northwest and I have maintained some of my research interests in that part of the country. Specifically, I am involved with a



floodplain restoration project on a tributary of the Columbia River. This research has involved a detailed investigation of the physical, chemical and biological connectivity between flood plain and river. For example, biological measures of connectivity included the presence of subterranean stoneflies within the floodplain alluvium. The impetus for this project was restoration of native salmon runs, which we believe can most effectively be restored by returning a semblance of normalcy to the flow regime, acquiring or protecting critical floodplain/riverine habitat, and allowing the river to avulse or change courses—a critical habitat-forming process. In the near future, I would like to apply these experiences and approaches to river systems in Michigan.

I have spent considerable time evaluating the flow of energy, carbon and nutrients through river ecosystems. Ongoing research in collaboration with faculty at the Annis Water Resources Institute will seek to provide a comparison or link between the energetic contributions from the autotrophic (algal) and heterotrophic (bacterial) compartments of the river ecosystem.

On a more personal note, outside of the biology department I completely enjoy time spent with my family; rolling in leaves with my three year old, camping and hiking in western and northern Michigan, singing, and water-color painting when time allows.

#### **Dr. Linda Thomasma**

I am very happy to be back at Grand Valley. I am a graduate of the Biology Department and have many great memories of my time here, most notably meeting my husband Scott (also a Biology Dept. alum)! After graduating from GVSU, I traveled around the country taking whatever job/volunteer position I could find that was related to my field. I eventually found a temporary job with the Fish and Wildlife Service in Idaho. My supervisor encouraged me to go on to graduate school and I attended Michigan Technological University where I had a great time studying fishers and martens (big weasels) in the UP. After completing my graduate degrees at MTU, I hit the road again to SUNY, Syracuse, then USDA Forest Service in West Virginia and then back to the UP to start my own wildlife consulting business. When I saw the opening at GVSU, I could not pass on the opportunity. I am very happy to be here and hope to share my varied experiences with my students, especially in Wildlife and Natural Resources Management. Scott and I are living in GR but escape to our cabin in the UP when time allows. We share our lives with three wild and wooly golden retrievers. We are happy to be back and hope to hear from you!



Linda & Scott

#### **Dr. Janet Vigna**

Originally from South Haven, Michigan, I received my bachelor's degree in Microbiology from the University of Michigan in Ann Arbor. I then attended the University of Iowa where I received a Ph.D. in Microbiology in 1996. I worked as an



Assistant Professor at Southwest State University in Marshall, MN for six years before returning to Michigan to join the biology faculty at Grand Valley State University. I am currently a member of the Integrated Science Program and teach both biology and science education courses at GVSU. I have many scholarly interests, especially related to gender issues in elementary and middle school science classrooms.

It has been an amazing experience for me to return home to western Michigan. Being away from the bluffs of Lake Michigan and tree-lined roads for so long has made me really appreciate the beauty of this state. I've had a great time this year fostering new relationships with colleagues and students at GVSU, and find this the most rewarding part of my career.

While in college, I marched in the Phantom Regiment Drum and Bugle Corps out of Rockford, IL, where I met my husband, currently a wetland scientist. We have two adventurous children, Bradley, 8 years old, and Benjamin, nearly 4. We love to be active outdoors, visiting the family cabin in Baldwin, MI as often as possible to hike and fish. We have also rekindled our love of water sports in the summer and a good game of euchre now and then. I can sum up much of my philosophy of life with the words of Ralph Waldo Emerson, who said "Nothing great was ever achieved without enthusiasm."

#### **A note from Dr. Lombardo**

Recently, Pat Thorpe and I attended the North American Ornithological Conference in New Orleans. While there we ran across two former GVSU Biology students. The first, Casey Armour (formerly Millard) had just finished her Ph.D. at the University of North Dakota. She was at the conference presenting part of her dissertation project on the effects of waterfowl management on American Bittern nesting behavior. Casey won an award from the American Ornithologists' Union to cover the costs of her travel to the meeting. The second student, Carrie Steen, is currently a graduate student in the Fisheries and Wildlife program at MSU. Carrie presented master's dissertation research on nesting habitats used



by Bald Eagles in Michigan. We also learned from Carrie that Shannon Hanna, our outstanding Biology senior in 2000, has completed her M.S. at MSU. Both Casey and Carrie were coauthors on our first publication about cloacal microbes in birds in 1996. Three other students worked on this project. Michael Henshaw earned a Ph.D. at Rice University and is currently on a postdoctoral fellowship in Australia studying primitively social wasps. At last word, Tamara Mills (formerly Zeller) was finishing her M.S. at the University of Alaska - Anchorage studying loon nesting habits in Alaska. Bob Cichewicz, the outstanding Biology senior in 1995, completed an M.S. at Northeast Louisiana University. *Needless to say we are very proud of the accomplishments of our former students.*

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*Provost tells me that Buffaloes become so very poor during hard winters, when the snows cover the ground to the depth of two or three feet, that they lose their hair, become covered with scabs, on which the Magpies feed, and the poor beasts die by hundreds. One can hardly conceive how it happens, notwithstanding these many deaths and the immense numbers that are murdered almost daily on these boundless wastes called prairies, besides the hosts that are drowned in the freshets, and the hundreds of young calves who die in early spring, so many are yet to be found. Daily we see so many that we hardly notice them more than the cattle in our pastures about our homes. But this cannot last; even now there is a perceptible difference in the size of the herds, and before many years the Buffalo, like the Great Auk, will have disappeared; surely this should not be permitted...*

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*John James Audubon, Missouri River Journals*

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## New Arrivals!

**Jodee Hunt** and **Ken Walits** welcomed a new addition to their family: they adopted a girl named **Nalani Nikole Lian Walits** (birth name is Lian Yuan Hong). Nalani was born on January 6, 2002 in China. Jodee and Ken began the adoption process in the Spring of 2002 and it was finalized in the Fall of 2002. Nalani joins her older brother Liam Walits.



**Rod** and **Katie Morgan** are pleased to announce the birth of their third child, **Simon Matthew Morgan** on September 11, 2002. He joins his older brother Collin (5 yrs) and older sister Grace (3 yrs).

**Nancy** and **John Shontz** welcome their first grand child, **Natalie Meaghan Shontz** born October 3, 2002.

## Faculty Activity

**Stephen Burton** gave a seminar entitled "Amphibian declines in southeast Idaho: using modeling to assess the habitat loss hypothesis" at Eastern Michigan University. Also, he and **Jann Joseph** presented "Using Fast Plants to Teach Integrative Science" at the Michigan Science Teachers Association 50th Annual Conference in Grand Rapids.

**Jodee Hunt** has been quite busy this year. With Cynthia Annett she published a paper: "Effects of habitat manipulation on reproductive

success of individual largemouth bass in an Ozark reservoir" in North American Journal of Fisheries Management. 22:1201-1208. With GVSU alumni **Nate Bacheler**, **Doug Wilson** and **Elaine Videan**, she published a paper "Enhancing largemouth bass spawning: behavioral and habitat considerations" pp. 277-290 in Black bass: ecology, conservation and management (D. Philipp and M. Ridgway, eds.) American Fisheries Society Symposium 31.

In April 2002 Jodee and her husband Ken Walits ran the Boston Marathon. She wrote "GVSU" on her belly and "Biology Department" on her back in big black letters. She won't admit her time but would like it known that she crossed the finish line upright and without assistance.

Jodee has been working with five GVSU undergraduates studying the behavior of the chimpanzee group at John Ball Zoo in Grand Rapids.

**Joe Jacquot** published a paper entitled "Characteristics of resident and wandering prairie voles, *Microtus ochrogaster*" in the Canadian Journal of Zoology 80:951-955. Also Joe developed a new course entitled Tropical Biology and will be taking 15 GVSU students to Australia in May.

At the Michigan Science Teachers Association annual meeting **Jann Joseph** was a panelist (with colleagues from MSU and Saginaw Valley State) on a forum entitled "Teaching Pedagogy; Separate or Together." Professor Joseph also gave two presentations recently: at the Association for Teacher Educators in Florida entitled "The Visions Project: Promoting Inquiry Science Teaching in an Urban School District Through a University Partnership." She also presented on this topic at the National Science Teachers Association Meeting.

**Scott Abella** (2000 graduate of the NRM program) and **Neil MacDonald** published a paper entitled "Spatial and temporal patterns of eastern white pine regeneration in a northwestern Ohio oak stand" in Michigan Botanist 41:111-119. This paper is based on work that Scott did for his capstone project at GVSU.

**Shaily Menon** received a Michigan Space Grant Consortium Research Seed Grant (2003-2004) and a Faculty Research Stipend (Summer 2003) for research on a project titled, "Leakage Analysis for Carbon Sequestration and Biodiversity Conservation." She is working on this project with collaborators at Marsh Institute and Clark University, Worcester, Massachusetts where she has an appointment as a Visiting Scholar.

**Alex Nikitin** published a paper entitled "Cloning, characterization and embryonic expression analysis of the **Drosophila** gene encoding insulin/relaxin-like peptide" in *Biochemical and Biophysical Research Communications* 295: 312-318.

**Rod Morgan** published a paper entitled "Enumeration of waterborne *Escherichia coli* with petrifilm plates: comparison to standard methods" in the *Journal of Environmental Quality* 32(1):368-73. His research on cave bacteria has been featured on GVSU's homepage. Recent data on research dealing with the cave bacteria will be presented by a student at the National Meeting of the American Society for Microbiology in May.

**Mel Northup** has set up three local weather stations and web cameras. You can access these regular updates at <http://gvsu.edu/weather>

**John Shontz** was honored with the 2002 Outstanding Educator of the Year award at the December commencement ceremony. The award is presented by the GVSU Alumni Association to a faculty member who has been nominated by alumni who graduated five years earlier. Also, along with **Nancy Shontz**, he published a glossary of definitions for approximately 900 botanical technical terms in the 2003 *Magill's Encyclopedia of Science: Plant Life*, pp. 1207-1243.

Separately, John wrote another article "Spices" dealing with the types, sources and uses of spices that are part of American cuisine. It too is found in the 2003 *Magill's Encyclopedia of Science: Plant Life*: pp. 977 – 980.

**Nancy Shontz** published the 6th edition of her study guide for Cummings' *Human Heredity* textbook.

**Terry Trier**, along with **William Mattson** (U.S. Forest Service) published the paper "Diet-Induced Thermogenesis: A Developing Concept in Nutritional Ecology" in the Forum section of *Environmental Entomology* 32(1):1-8. He also created a website funded by a cooperative agreement between the Michigan DNR Endangered Species Program and GVSU that focuses on creating public awareness of the MDNR's Habitat Conservation Plan for managing the endangered Karner Blue butterfly at the ecosystem level. The site is currently being maintained by student **Tony Chacon**, who also developed an endangered species survey for the website. You can access the Karner Blue website at <http://www.karnerblue.org>



## New Courses Approved:

**BIO 109 Plants in the World.** A non-majors course that looks at the ways plants are used by humans as foods, flavorings, fibers, medicines, building materials, etc. Topics include biotechnology, environmental issues and population issues.

## BIO 319 Global Agricultural Sustainability.

Study of the biological and environmental principles at the foundation of agricultural sustainability; how various traditional and modern agricultural practices follow those principles; and how social, cultural, and economic factors ultimately control agricultural practices. Cohesiveness with other courses in this theme will be maintained by highlighting a specific geographical region.

## Master of Science in Biology has been approved!

After many years of planning and organization, the Board of Trustees has approved the Master of Science in Biology. The first class of graduate students in the Biology Department will arrive and begin their studies in the Fall of 2003. The Master of Science in Biology is a versatile graduate program designed to produce outstanding graduates. Versatility in the program will allow students to achieve individual goals while serving a diversity of student interests. Students have the opportunity to pursue graduate programs in broad areas such as genetics and cell biology, organismal biology, aquatic and terrestrial ecology, and natural resources. As a focus for these M.S. programs, we offer internship, project, and thesis pathways. Optional emphases are offered in Natural Resources, Cell and Molecular Biology, and Aquatic Sciences. For more information on the program visit <http://www.gvsu.edu/biology>



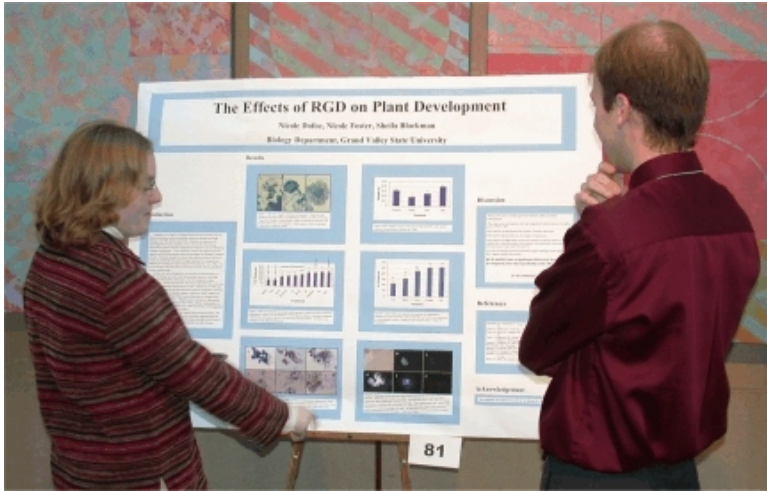
**Looking for back issues of Cobwebs?** No problem! We are online at: <http://www4.gvsu.edu/triert/cobwebs/Cobwebs.htm>

## Keeping in Touch

We hope you enjoy our newsletter and that you will keep in touch with us. We welcome your feedback. Share news with us—even if it is old to you. Give us your email address and expect some kind of response (though not an instant one). We are accessible through [menons@gvsu.edu](mailto:menons@gvsu.edu), phone: 616-331-2470. Keep the Biology Department informed of changes in your mailing address, and if there



are classmates out there that you've lost touch with, ask us for addresses. And don't forget to visit us at [www.gvsu.edu/biology](http://www.gvsu.edu/biology) or from the GVSU homepage under academic programs.



Nicole Dafoe and Kevin Dondzilla

Congratulations to **Nicole Dafoe** (left), our biology major **Outstanding Graduating Senior** for 2003. Nicole is shown here giving a poster demonstration on "The Effects of RGD on Plant Development" at the 2003 Student Scholarship Day at GVSU. Showing a keen interest in Nicole's presentation is senior **Kevin Dondzilla** who, along with senior **Ryan Frisch**, also presented that day. Their talk was entitled "Production and Fusion of Protoplasts of *Dendrothema grandiflora* (*Chrysanthemum*)."

*A tundra botanist once described to me her patient disassembly of a cluster of plants on a tussock, a tundra mound about 18 inches high and a foot or so across. She separated live from dead plant tissue and noted the number and kind of the many species of plants. She examined the insects and husks of berries, down to bits of things nearly too slight to see or to hold without crushing. The process took hours, and her concentration and sense of passing time became fixed at that scale. She said she remembered looking up at one point, at the tundra that rolled away in a hundred thousand tussocks toward the horizon, and that she could not return her gaze because of that sight, not for long minutes.*

Barry Lopez, *Arctic Dreams*



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