



BIOGEEK: The Northwestern College Biology Departmental Newsletter

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Northwestern College (NWC)

Science on Display: NWC Plans for a New Science Building

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It's true! Northwestern College has big plans and has begun a fundraising campaign for a new Natural Sciences Building. It will be located on highway 10 west of Ramaker Center. The building will house the biology, chemistry, and nursing departments.

Plans include expanded space for state-of-the-art teaching and research laboratories, animal quar-

ters, a greenhouse, clinical laboratories, and plenty of space for individual and group study. Chemistry and biology faculty offices will be on the second floor and nursing faculty offices on ground level. The lower level will include clinical labs and animal quarters. Teaching and research laboratories will be found on all three levels. Plans even include a rooftop greenhouse.

We are not completely vacating our old Van Peurse Hall (VPH)

home. Anatomy and physiology labs will remain in VPH, along with some chemistry labs.

We are looking forward to increased space for mentored research experiences with our students and more convenient collaboration between departments.

Stay tuned for updates on this exciting story!



Special Points of Interest:

- * A new natural and health science building is planned.
- * Student/faculty research
- * Departmental club news
- * Faculty and student honors
- * Dr. Genade joins department

Students Conduct Research with NWC Faculty

Mawuli MacDonald, Megan Feuchtenberger, Arianne Gesell, Alison Schut, Laura Hurley, Britta Ten Haken, Joseph Tolsma, and Emily Stricklin will be doing research with Drs. Genade, Furlong, and Tolsma during the 2015/16 academic year. As Junior Scholars, Honors Research Students, or student assistants they

are working on projects that include vaccine education, mayfly population genetics, anti-proliferative effects of plant extracts on human tumor cells, and the effect of NT-020 on aging. We hope our work may lead to "an effective way to promote the health of the aging brain and perhaps slow

unwanted effects that develop with age and neurodegenerative diseases," says Feuchtenberger. '16.

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Biology Department,
Northwestern College
Ecological Science Department,
and/or Northwestern College
Future Physicians Club

Students Present Research at Iowa Academy of Sciences

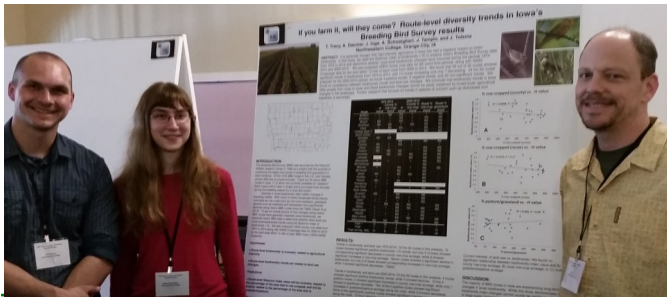
The 2015 Cell Biology and Avian Ecology students presented their research at the Iowa Academy of Sciences Annual Meeting in April. The cell biology students studied anti-proliferative effects of plant extracts on human tumor cells. Ecology students studied

the effects of fire on biodiversity and the effects of agriculture on the migration patterns of birds.

Students were able to attend lectures and browse posters presented by students across the state of Iowa.

Graduate Bethany Wood says research helped her “gain confi-

dence in my ability to use the information I had learned in lecture and apply it to my research as well as my ability to perform the techniques needed for research.”

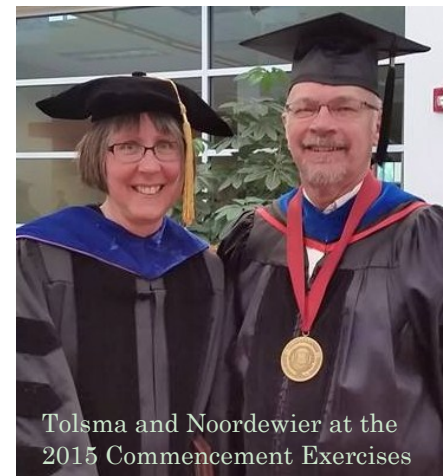


NWC Biology Faculty Sweep Honors

Dr. Byron Noordewier was the 2015 recipient of the Faculty Inspirational Service Award. You all know Dr. Noordewier is inspirational in the classroom but did you also know that he is a nationally recognized NAIA Faculty Athletic Representative? He also serves NWC as a sports announcer on the radio and on the web. The award was given at the Spring Employee Awards Banquet.

Dr. Sara Tolsma received the 2015 Teaching Excellence Award at the Northwestern College Commencement Exercises in May.

The department is proud that their colleagues were recognized in these ways but we know that all seven of the biology faculty members serve inspirationally and teach with excellence every day!



Tolsma and Noordewier at the 2015 Commencement Exercises

Genade Brings New Research to the Department

The newest faculty member in the Biology Department is Dr. Tyrone Genade. Dr. Genade came to us from the University of Cape Town, South Africa. His research on aging focuses on the effects of resveratrol (found in grape juice and red wine), calorie restriction, and various extracts, including NT-020 (green tea, blueberries, vitamin D3 and carnosine) on a small fish, *Nothobranchius furzeri*, native to South Africa.



His expertise in neurobiology, anatomy, and histology have added depth to the departmental expertise. He teaches courses in anatomy and physiology as well as directing several student research projects.

Dr. Genade joined the department in 2013, bringing with him a growing number of aquaria!

Creation Care Club

The Creation Care Club (CCC) has big plans for our campus. A group of students and I were inspired by our professors to develop ways in which we could connect learning with faith and action. The CCC, which has been inactive for a number of years, is becoming



ing active both on campus and in the Orange City community. We are working closely with a national organization called YECA that encourages Christians to become interested in climate action. Already this semester, we have worked with a local church and a local coffee shop to develop environmentally friendly strategies. With twenty-five students signed up to be members of CCC, we are excited to make a positive impact on Northwestern's campus and beyond. We have received outside funding to participate in the upcoming election process, encouraging presidential candidates to

take a strong stance on climate action. But why bother? We believe that pollution and climate change is caused by humans and is not only inherently sinful but also disproportionately affects the poor and disadvantaged. The Bible is clear to us. We have a responsibility as Christians to both care for creation and alleviate human suffering and, in short, that is our goal. We would love to hear from alumni and anyone who has been involved in similar groups. Encouragement, advice, and prayers are always welcome.

-Joseph Tolsma - '17, Ecology Major

Future Physicians Club

We all know that science in general is awesome, but one amazing aspect of science is when knowledge obtained from discovery is applied to pursuing God's redeeming work. This method of action to restore broken parts of creation motivates Northwestern's Future Physicians Club (FPC). The members of this group are students aspiring to apply the science they are learning at Northwestern and future knowledge from medical school to provide for the medical needs of others. Being a part of the Future

Physicians Club means finding encouragement from other pre-health profession students and advisors to excel in undergraduate classes, participating in health related educational opportunities, preparing well for graduate school entrance exams and interviews as well as providing guidance as students wrestle with what it means to truly offer their lives to God as His hands and feet in the medical world.

-Samantha Thomson – '16, FPC Leader

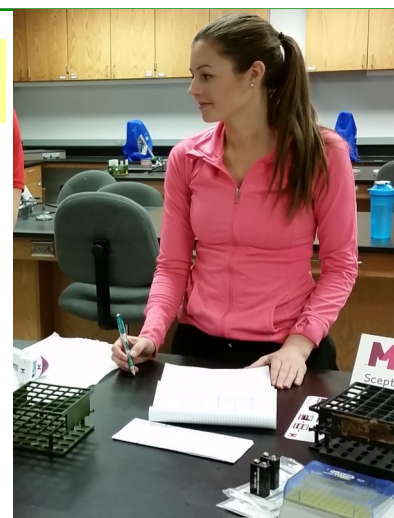
“Being a part of the Future Physicians Club means finding encouragement from other pre-health profession students and advisors.”

Alumni Feature

Emma Wynja, a 2015 summa cum laude graduate who majored in biology health professions and chemistry, earned Outstanding Graduating Senior honors from both the biology and chemistry departments. Emma spent the summer (2015) as part of a research team at Sanford Research Center in Sioux Falls working in Dr. Paola Vermeer's laboratory on a project exploring human papillomavirus (HPV)-associated head and neck squamous cell carcinoma. The lab is seeking

ing to identify new targets for therapeutic intervention of these cancers.

Emma is currently a student at the University of South Dakota Sanford School of Medicine. She was selected as the 2015 recipient of the prestigious South Dakota State Medical Association Foundation Freshman Scholarship.



Emma doing research at NWC.

Northwestern College

Phone: 712.707.7000
E-mail: NWCbiology@nwciowa.edu

Northwestern College
Department of Biology
101 7th St SW
Orange City, IA 51041



REFLECTION

A few summers ago, I traveled to Israel with a group led by Marlin Vis. As we rested by a spring-fed stream in a dry canyon, Marlin discussed the meaning of “living water” in the Jewish religious tradition. Only living, or flowing, water is suitable for ritual cleansing. This brought new depth and meaning to Christ’s words to the woman at the well (John 4:10-14). Now, every time I wade in a stream or sit beside a spring, I remember His offer. L. Furlong

The Mission of the Department of Biology

The mission of the Department of Biology of Northwestern College is to provide students with an understanding of the complexities of life that encompasses all levels of biological organization. These levels range from the molecules of life to living organisms, from molecular interactions within cells to cellular and other interactions within organisms, to interactions of organisms with one another and their environment. To gain this understanding, students will be introduced to classical and modern approaches to biological inquiry. Students will thus gain an appreciation for the basis of our current understanding of biology and will be prepared to apply experimental inquiry to solve problems in biology.

This mission will be carried out within the context of a Christian liberal arts education in which God is recognized and honored as Creator, Christ is acknowledged as Lord over all and Redeemer of creation, and we are called to be stewards of creation. The Department of Biology strives for its students to engage in honest and open investigation while being faithful to their Lord and Savior. Thus, the comprehensive integration of faith, learning and living espoused by Northwestern College shall be reflected in the life of the faculty and students of the Department of Biology.

2015 Biology Graduates

Twenty biology majors walked across the stage at the 2015 Northwestern College Commencement Exercises to receive their diplomas. Our 2015 graduates are busy pursuing their callings—starting new jobs as medical students, graduate students, doing research, in dental school, doing clinical

coursework for Medical Laboratory Technology—at the University of South Dakota, University of Michigan, University of Nebraska, St. Luke’s in Sioux City, Des Moines, Iowa City, and across the country. We are always impressed as

“I realized that I had a stronger desire for research than I had thought. Knowing you enjoy research is something many people wouldn’t know unless they tried.” - Bethany Wood ’15

we watch our graduates transition into the next chapter of their lives,



knowing the amazing potential they have to pursue God’s redeeming work in our world. Good luck 2015 biology graduates! We are excited to see what is in store for your bright futures and consider working with you over the past four years, as you discovered your calling, a true privilege!