

FACULTY newsletter

CPMS Physical and Mathematical Sciences



Levi Price

ABOVE The dean congratulates Wayne Anderson on his award

Part of a Prestigious Group: Wayne Anderson

At this year's Annual University Conference, Wayne Anderson, who serves as the research and personnel administrator for the Department of Chemistry and Biochemistry, received the Ben E. Lewis Award which recognizes an administrative employee who exhibits outstanding management abilities.

"When I look at past award winners, it's a very prestigious group, and I'm pleased to be a part of that," Anderson said.

Anderson manages many aspects of research and development activities in the Department of Chemistry and Biochemistry. His duties include assisting professors in submitting proposals, assembling budgets and finding students from BYU and other universities to help perform research.

"Often times with our externally funded research projects, we will need special expertise not available at BYU," he said. "I will help faculty recruit and hire

research faculty for a short-term assignment. Many of these scientists come from foreign countries and require visiting scholar visas. These scholars enhance the research experience of our students."

Anderson enjoys his management position and says the aspect of his job he likes most is the people he works with. He feels students and faculty play an important role in the Department of Chemistry and Biochemistry's special environment.

"It is a unique organization because of the emphasis the faculty place on students and research," he said. "We have a strong commitment to get the students involved in leading-edge research early on in their careers."

Anderson has worked at BYU for 16 years and feels privileged to be receiving the award.

"I'm honored. It's a recognition I really appreciate," he said.

by: Stacie Carnley



Levi Price

ABOVE Steven Wood receives his award from the dean

With Dr. Wood, You've Got a Friend in Chem

At this year's Annual University Conference, Professor Steven Wood, from the Department of Chemistry and Biochemistry, received the Karl G. Maeser Professional Faculty Excellence Award. The award recognizes outstanding achievement in fulfilling professional faculty responsibilities. Wood was nominated for his effective teaching and ability to create a comfortable setting where students are actively engaged in the learning process.

"The letter announcing the award surprised me," Wood said. "I know there are many excellent professional faculty that are making significant contributions to the university. I feel honored to be counted among them."

In addition to teaching chemistry courses since 1986, Wood serves as general chemistry coordinator. His duties include responsibility for all department TAs and organizing large sections of Chem 105 and 106 classes. He is also

a member of the university rank and status committee and oversees portfolios of professional faculty being considered for continuing faculty status and rank advancement.

In 2004, Wood took sole responsibility for a department project called ChemCompanion. ChemCompanion is a unique program designed to help students understand chemistry. It's a cross between a textbook, a classroom lecture and an interactive website — complete with videos, notes, and illustrations.

"Having the visuals presented synchronously with the text is really helpful and facilitates learning," he said. "This can't be done in a book."

Developing programs like ChemCompanion is only part of what Wood loves most about his job — teaching students.

"I love it when they understand the chemistry. They become empowered as they see it everywhere around them," said Wood. "It makes it all worth it."

by: Stacie Carnley

Dates to Remember

MEG Grant Deadline
Tuesday, Nov. 1, by midnight

ORCA Endorsement Deadline
Friday, Nov. 4, by midnight

College Christmas Luncheon
Friday, Dec. 9, 11:30 a.m.
ESC Pendulum Court



Jaren Wilkey/BYU Photo

ABOVE Kent Gee in the anechoic chamber

At the Speed of Sound: Keeping Up with Kent

For more on Gee's work see <http://news.byu.edu/archive11-mar-rocketnoise.aspx>.

At this year's Annual University Conference, physics professor Kent Gee received the Young Scholar Award, which encourages and acknowledges outstanding promise and contributions made by faculty in the early stages of their careers.

Gee, who has been a faculty member in the Department of Physics and Astronomy since 2005, is a nationally recognized authority in nonlinear acoustics. Some of his research projects include active control of fan noise; buffering the sound of Gatling guns, jet and rocket noise; and discovering vibration patterns of Balinese gongs.

He has a deep commitment to mentoring students and always involves them in his work. Together Gee and his students have written and published numerous scholarly articles.

Back in Gee's own undergraduate days, he was mentored by the college's current dean, Scott Sommerfeldt. Sommerfeldt said he recognized Gee's talent when they first started researching active control of fan noise together. When Gee returned to BYU as a faculty member, he had also branched out into the area of nonlinear, or in other words extremely loud, acoustics.

"It became apparent that he was really the expert in nonlinear acoustics," Sommerfeldt said. "So we transitioned to where he took the lead role in the rocket noise research we were collaborating on."

Sommerfeldt describes Gee as an excellent teacher and multitasker who thrives on taking difficult measurements out in the field.

"Kent is very energetic and always has something going on," said Sommerfeldt. "Most of us have a hard time keeping up with him."

Gee was nominated for the award because of his nationally recognized research on nonlinear acoustics and his commitment to both individual mentoring and classroom teaching. He was gracious about receiving the award and credits the support of colleagues and loved ones as a key factor in his success.

"I am grateful for the recognition from colleagues," he said. "What I've accomplished has been with excellent collaborators and diligent, creative students, and with unflagging support from my family."

by: Stacie Carnley



Levi Price

ABOVE The dean congratulates Linda Richards on her award

A Job Very Well Done in the Chem Stockroom

At this year's Annual University Conference, Linda Richards, who works as assistant manager in the chemistry stockroom, received the President's Appreciation Award which recognizes staff and administrative personnel for exceptional service, creativity and competence.

"I'm not in a very glamorous job at all. I was really surprised because I'm not at the forefront of an important office," said Richards of receiving the award.

While Richards may downplay her role, the chemistry stockroom where Richards works is in fact a valuable resource to the Department of Chemistry and Biochemistry and much of the BYU campus. Her duties include supervising student employees, managing the stockroom's large supply of gas cylinders, receiving shipments, overseeing department deliveries, managing stockroom cash sales, and preparing lab kits for Chemistry 107 and 113 classes.

Richards' position encompasses many responsibilities, more than she expected when originally hired.

"As the assistant manager, my job is to assist the manager," she said. "Right now we don't have a manager, so I'm trying to cover both jobs. It's tough for one person, but we're getting along the best we can."

Richards was nominated for her tremendous work ethic, congeniality, honesty and exceptional attention to detail.

"I feel very honored and happily surprised that others think I am performing well enough to be nominated," she said. "Above and beyond any recognition on campus, the most satisfying thing about getting the award is knowing that the department thinks I'm doing a good job."

by: Stacey Carnley



Levi Price

ABOVE Allen Buskirk receives his award from the dean

The Young and the Scholarly: Allen Buskirk

At this year's Annual University Conference, Professor Allen Buskirk from the Department of Chemistry and Biochemistry received the BYU Class of 1949 Endowed Young Faculty Award, which recognizes junior faculty members who show substantial promise for becoming outstanding teachers and scholars.

"It's kind of surprising actually," said Buskirk, "but I think it's fantastic. It's a really nice honor."

Buskirk teaches both undergraduate- and graduate-level biochemistry courses and oversees a molecular biology research lab. The award includes a research stipend which he plans to use to further his studies on protein synthesis in bacteria.

"We're interested in things that go wrong in the protein synthesis process and how they get fixed," he said. "Bac-

teria have a unique way of dealing with ribosome stalling. One day their mechanism for rescuing stalled ribosomes may serve as a new antibiotic target."

Buskirk spends a lot of time doing research — an aspect of his job that he loves.

"Research is fun," he said. "When you come up with a new idea, it's exciting to figure out how it works and to talk with other scientists. Coming up with new ideas is really exciting."

Buskirk describes research as a group effort and views the award as a success not only for him, but for his research team.

"My graduate students do most of the work in the lab," he said. "[This award] recognizes all of their work as well."

by: Stacie Carnley



Levi Price

ABOVE Steven Goates receives his award from the dean

Dr. Steve Goates: No Plain Old GE Professor

At this year's Annual University Conference, Professor Steven Goates, from the Department of Chemistry and Biochemistry, was awarded a General Education Professorship. The award recognizes exceptional service to General Education at Brigham Young University through outstanding teaching, the development of new courses, new programs or new philosophies, and by a sustained, long-term commitment to these efforts.

Goates was recently released as associate chair in the Department of Chemistry and Biochemistry after serving in the position for seven years. Now, he says, "I am enjoying being just a plain old professor."

Despite Goates' humility, his exceptional work did not go unnoticed by his colleagues. He was nominated for the professorship because he is a "champion of the principles of general education." Over a long career, Goates has contributed to a wide variety of GE courses and played a particular role in advanced writing at the university, including a writing class designed to prepare students for the types of scientific communication required in chemistry and biochemistry fields.

Not only has Goates strived to improve curriculum, he is also a trusted

advisor to students. His colleagues described one of Goates' most impressive attributes as his complete dedication to quality teaching and to his students. Those who nominated him for the award remarked that it is not uncommon to see groups of students lined up outside of his office where he provides an attentive ear, a depth of knowledge and a genuine desire to help.

The aspect of his job that Goates loves most is working with students.

"I really enjoy interacting with students and seeing them develop," he said. "Over the years, this has become an ever greater point of job satisfaction for me."

Besides recognizing Goates' exceptional service, the General Education Professorship includes an annual research stipend which will be used to support his student research team in a project that uses laser spectroscopic methods to probe fundamental processes in chemical separations.

Goates has been a BYU faculty member for 29 years and views the award as an honor.

"I am very gratified that my colleagues nominated me," he said.

by: Stacie Carnley

EDITOR'S NOTE Chemistry professor Daniel Simmons received the Technology Transfer Award at AUC. Dr. Simmons was unavailable for an interview.

FAC Website

<http://fac.byu.edu/>

The Faculty Advisement Council has recently created a website that includes proposals from last year, the list of representatives from the colleges and an area where faculty can make suggestions to the FAC.

We encourage faculty to take advantage of this great resource, which will help the FAC better represent the members of the college.

Questions? Contact your representatives: David Dearden (david_dearden@byu.edu) and Mike Goodrich (mike@cs.byu.edu).

College Grants

Chemistry & Biochemistry

[Matthew Linford](#)

Sponsor: P2i

Title: Advanced Nanocoatings

[Richard Watt](#)

Sponsor: Naval Air Warfare Center

Title: Novel Lead-free Ballistic Modifiers for Improved IM-Compliant Minimum Signature Propellants

Computer Science

[Michael Jones](#) & [Eric Hintz](#) (P&A)

Sponsor: NSF

Title: Improving Learning by Deaf Children in Planetariums

[Sean Warnick](#)

Sponsor: Air Force Research Lab

Title: Analysis and Design of Complex Networked Environments

Geological Sciences

[Thomas Morris](#)

Sponsor: Utah Geological Survey

Title: Delineation of the J₁ Unconformity Using Bulk Chemistry

Physics & Astronomy

[Kent Gee](#) & [Scott Sommerfeldt](#)

Sponsor: NSF

Title: A New Minimization Quantity for Global Active Structural/Acoustic Control

[Kent Gee](#) & [Tracianne Neilsen](#)

Sponsor: ONR

Title: Detailed Characterization of the Near-field Noise Environment from a Full-scale Heated, Supersonic Jet

[Eric Hintz](#) & [Mike Jones](#) (CS)

Sponsor: NSF

Title: Improving Learning by Deaf Children in Planetariums

College Publications

Chemistry and Biochemistry

D. Boda, [D. Henderson](#), B. Eisenberg, D. Gillespie, "A Method for Treating the Passage of a Charged Hard Sphere Ion as it Passes Through a Sharp Dielectric Boundary", *Journal of Chemical Physics*, 2011, volume 135/issue 6, 12 pp.

A. Curtis, [M. Asplund](#), [J. Patterson](#), "Use of Variable Time-Delay Sum-Frequency Generation for Improved Spectroscopic Analysis", *Journal of Physical Chemistry*, 2011, volume 115/issue 39, pp. 19303-19310

N. Demarse, C. Quinn, [D. Eggett](#), D. Russell, [L. Hansen](#), "Calibration of Nanowatt Isothermal Titration Calorimeters with Overflow Reaction Vessels", *Analytical Biochemistry*, 2011, volume 417/issue 2, pp. 247-255

M. Heywood, N. Taylor, [P. Farnsworth](#), "Measurement of Helium Metastable Atom Densities in a Plasma-Based Ambient Ionization Source", *Analytical Chemistry*, 2011, volume 83/issue 17, pp. 6493-6499

H. Lee, J. Lee, S. Jang, H. Park, S. Kim, Y. Kim, C. Kim, [R. Harrison](#), "Zinc Selective Chemosensor Based on Pyridyl-Amide Fluorescence", *Tetrahedron*, 2011, volume 67/issue 42, pp. 8073-8078

M. Mayo, A. Nicholson, [L. Hansen](#), [J. Hansen](#), "Chemical Treatment of Algae to Facilitate Biogas Production by Anaerobic Digestion", *Transactions of the ASABE*, 2011, volume 54/issue 4, pp. 1547-1550

Computer Science

R. Arthur, [D. Olsen](#), "XICE Windowing Toolkit: Seamless Display Annexation", *ACM Transactions on Computer-Human Interaction*, 2011, volume 18/issue 3, pp. 115-122

M.S. Gashler, [D. Ventura](#), [T. Martinez](#), "Manifold Learning by Graduated Optimization", *IEEE Transactions on Systems, Man, and Cybernetics B*, 2011, issue 99, pp. 1-13

M.S. Gashler, [T. Martinez](#), "Tangent Space Guided Intelligent Neighbor Finding", *Proceedings of the IEEE International Joint Conference on Neural Networks IJCNN*, 2011, pp. 2617-2624

D. Kennard, [W. Barrett](#), [T. Sederberg](#), "Word Warping for Offline Handwriting Recognition", *11th International Conference on Document Analysis and Recognition (ICDAR)*, 2011, volume 1, pp. 1349-1353

D. Kennard, A. Kent, [W. Barrett](#), "Linking the Past: Discovering Historical Social Networks from Documents and Linking to a Genealogical Database", *First International Workshop on Historical Document Imaging and Processing (HIP)*, 2011, volume 1, pp. 43-50

C. Klein, [J. McCarthy](#), S. Jaconette, R.B. Findler, "A Semantics for Context-Sensitive Reduction Semantics", *Asian Symposium on Programming Languages and Systems*, 2011

K. Monteith, V. Francisco, [T. Martinez](#), P. Gervas, [D. Ventura](#), "Automatic Generation of Emotionally-Targeted Soundtracks", *Proceedings of the International Conference on Computational Creativity (ICCC)*, 2011, pp. 60-62

[D. Olsen](#), B. Moon, "Video Summarization Based on User Interaction", *Proceedings of the 9th International Interactive Conference on Interactive Television (EuroITV)*, 2011, pp. 115-122

A. Peterson, [T. Martinez](#), G. Rudolph, "On the Structure of Algorithm Spaces", *Proceedings of the International Joint Conference on Neural Networks IJCNN*, 2011, pp. 658-665

S. Pinson, [W. Barrett](#), "Connected Component Level Discrimination of Handwritten and Machine-Printed Text Using Eigenfaces", *11th International Conference on Document Analysis and Recognition (ICDAR)*, 2011, volume 1, pp. 1394-1398

Statistics

N. Demarse, C. Quinn, [D. Eggett](#), D. Russell, [L. Hansen](#), "Calibration of Nanowatt Isothermal Titration Calorimeters with Overflow Reaction Vessels", *Analytical Biochemistry*, 2011, volume 417/issue 2, pp. 247-255

T. Horner, M. Dunn, [D. Eggett](#), L. Ogden, "β-Galactosidase Activity of Commercial Lactase Samples in Raw and Pasteurized Milk at Refrigerated Temperatures", *Journal of Dairy Science*, 2011, volume 94/issue 7, pp. 3242-3249

S. Snyder, J. Reber, B. Freeman, K. Orgad, [D. Eggett](#), T. Parker, "Controlling for Sugar and Ascorbic Acid, a Mixture of Flavonoids Matching Navel Oranges Significantly Increases Human Postprandial Serum Antioxidant Capacity", *Nutrition Research*, 2011, volume 31/issue 7, pp. 519-526