

# Jeffrey D. Newman

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## Education

December, 1992	Ph.D. (Molecular Biology) Thesis Title: <i>Rhizobium</i> Purine Metabolism and it's Role in Infection of Legumes	Marquette University
May, 1988	B.S. (Biology)	University of South Carolina

## Professional Experience

08/95 - present	Assistant Professor of Biology, Lycoming College
01/93 - 08/95	Postdoctoral Research Associate in the laboratory of Dr. Joe Chappell, University of Kentucky. Investigation of promoter elements controlling expression of a plant defense-related gene and proteins that bind to these elements

## Professional Societies

- American Association for the Advancement of Science (AAAS)
- American Society for Microbiology (ASM)
- American Society for Cell Biology (ASCB)
- Pennsylvania Academy of Science (PAS)
- Council for Undergraduate Research (CUR)

## Honors and Awards

2000	Merck/AAAS Undergraduate Science Research Program Grant, \$60,000 over 3 years, led by Holly Bendorf, total of 6 Biology & Chemistry Faculty
1999	US Patent # 6,002,071. Transcriptional Silencing Elements and their Binding Factors. With Joseph Chappell and Shaohui Yin.
1998	ASM Faculty Travel Grant to attend the ASM National Microbiology Education Conference
1996	Lycoming College Professional Development Grant :The Role of <i>purY</i> in Prokaryotic Purine Biosynthesis.
1992	Pharmacia Award for "Exceptional Achievement in Biological Research". Cash prize competitively awarded based on evaluation of a publication.
1991-1992	Marquette University Fellowship - a competitive award with recipients selected on the basis of short research proposals.
1990-1991	Marquette University Fellowship
1990	Charles O'Hara Scholarship to attend the Advanced Course in Plant-Microbe Interactions at the Plant Biotechnology Center, University of Guelph, Canada.

## Professional Activities

- Dec., 2000 Will Present "*Investigational Bioinformatics to Support Core Laboratory Activities*" at American Society for Cell Biology Annual Meeting, San Francisco at an Education Workshop entitled, "Continuing the Dialogue on Genomics: A Revolution in Progress."
- 2000-2001 Participation in Genome Consortium for Active Teaching (GCAT) led by A. Malcolm Campbell, Davidson College. This project will be the first to incorporate the use of cutting-edge "Gene Chips" into the undergraduate curriculum.
- Aug., 2000 Participation in Researchlink 2000 - a CUR program to incorporate research-based labs into the curriculum.
- July, 2000 Invited to write questions for Biochemistry, Cell and Molecular Biology GRE Subject test.
- July, 2000 Consulted with University of Wisconsin, Parkside on Integration of Bioinformatics Across the Biology Curriculum.
- June, 2000 Posters presented at Council for Undergraduate Research National Conference, "*Cloning and Expression of Staphylococcus aureus Genes for Antimicrobial Development.*" and "*Bioinformatics in Undergraduate Research and Required Courses.*"
- May, 2000 Chapter Review for *Introduction to Genetics* by Pierce (WH Freeman).
- April, 2000 Presented "*Integration of Bioinformatics Across the Biology Curriculum*" at Benjamin Cummings Strategies for Success Workshop, Richland Community College, Dallas TX.
- Mar., 2000 Presented "*Integration of Bioinformatics Across the Biology Curriculum*" at Wiley Publishers Celebrate Science Workshop, California State University, Fullerton.
- Dec., 1999 Presented "*Integration of Bioinformatics Across the Biology Curriculum*" at American Society for Cell Biology Annual Meeting, Washington DC at an Education Workshop entitled, Genomics: How Do We Teach in the Middle of a Revolution?
- Nov., 1999 Presented "*Integration of Bioinformatics Across the Biology Curriculum*" and "*Hands-on Analysis of 3-D Protein Structures*" at Strategies for Success Workshop, University of Hartford, CT.
- Nov., 1998 Chapter Review for 4th edition of *Molecular Cell Biology* textbook by Lodish *et al.*, (WH Freeman).
- Oct., 1998 Homecoming (10 yrs!) Research Seminar at the University of South Carolina entitled "*The Purine Biosynthetic Enzyme FGAR Amidotransferase as a Potential Target for Antimicrobial Drugs.*"
- June, 1998 Featured Speaker in Computers in the Curriculum Program at Drew University: "*Application of Computer Technology to Facilitate Student Learning.*"
- May, 1998 Presented "*Ribosomal RNA Gene Amplification and Sequencing to Identify Unknown Microbes*" at the ASM National Microbiology Education Conference, Atlanta.
- May, 1998 Research Seminar at Drexel University – "*FGAR Amidotransferase: A Purine Biosynthetic Enzyme with Potential as a Target for Antimicrobial Drugs.*"
- Jan., 1998 Grant Proposal Review Panel - National Science Foundation Instrumentation and Lab Improvement Program (NSF-ILI).
- Nov., 1997 Presented "*A World Wide Classroom: Using the Web as a Course Supplement*" at Benjamin Cummings Strategies for Success Workshop, West Chester University.
- 1995-1997 Manuscript Reviews - FEMS Microbiol. Letters, Journal of Chemical Education, Molecular Plant-Microbe Interactions.

## Teaching Experience/Responsibilities \* indicates course includes Laboratory.

Lycoming College - Assistant Professor (Fall, 1995 - present)

- Bio 101\*, 102\* - Principles of Biology I and II (non-majors)
- Bio 110\* - Introductory Biology (Fall, 2000)
- Bio 222\* - Genetics
- Bio 321\* - Microbiology
- Bio 435\* - Cell Biology
- Bio 437\* - Molecular Biology
- Bio/Chem 444\* - Biochemistry

Pennsylvania College of Technology - Instructor (Summer, 1997):

- Bio 201\* - Microbiology

Lexington County Community College (KY) – Instructor (Fall, 1994)

- Bio 103 – Principles of Biology (non-majors)

Marquette University - Teaching Assistant (Fall, 1988 - Spring 1990):

- Microbiology, Genetics Laboratory\*, Introductory Biology Laboratory\*, Molecular Biology Laboratory\*.

## Publications

- Newman JD (2000) Molecular Phylogeny in the Undergraduate Microbiology Laboratory. *Focus on Microbiology Education* 6(2):3-4.
- Newman JD, Yin S, Chappell J. (1998) Characterization of the TAC Box, a cis-Element within an Elicitor-Inducible Sesquiterpene Cyclase Promoter. *Plant Journal* 6:1-12.
- Yin S, Mei L, Newman JD, Back K, Chappell J. (1997) Characterization of an elicitor and pathogen inducible tobacco sesquiterpene cyclase promoter. *Plant Physiology* 115:437-451.
- Newman JD, Chappell J. (1997) Isoprenoid biosynthesis in plants: Carbon partitioning within the cytoplasmic pathway. in *Biochemistry and Function of Sterols*. Nes WD and Parish EJ eds. CRC Press, Boca Raton pp. 123-134.
- Torisky RS, Kovacs L, Adviusko SA, Newman JD, Hunt AG, Collins GB. (1997) Development of a binary vector system for plant transformation based on the supervirulent *Agrobacterium tumefaciens* strain Chry5. *Plant Cell Reports*, 17:102-108.
- Newman JD, Rosovitz MJ\*, Noel KD. (1995) Requirement for rhizobial production of 5-aminoimidazole-4-carboxamide ribonucleotide (AICAR) for infection of bean. *Molecular Plant-Microbe Interactions*. 8:407-414.
- Newman JD, Diebold RJ, Schultz BW, Noel KD. (1994) Infection of soybean and pea nodules by *Rhizobium* spp. purine auxotrophs in the presence of 5-aminoimidazole-4-carboxamide riboside. *Journal of Bacteriology*. 176:3286-3294.
- Newman JD, Schultz BW\*, Noel KD (1992) Dissection of nodule development by supplementation of *Rhizobium leguminosarum* biovar *phaseoli* purine auxotrophs with 5-aminoimidazole-4-carboxamide riboside. *Plant Physiology*. 99:401-408.

\* indicates undergraduate co-authors

## Research Activities with Undergraduate Students

- **Christy Boob**<sup>1,5</sup> - Summer research student - Expression and Purification of *Rhizobium etli purY*.
- **Jennifer Leader**<sup>1</sup> - Lab Assistant Project - Cloning of *Escherichia coli purL*.
- **Justin Jay**<sup>1</sup> - Lab Assistant Project - Cloning of *Escherichia coli purL*.
- **Joshua Stutzman** - Independent Study: Effect of androstenedione on mouse leydig cells
- **Deanne Greene**<sup>5</sup> - Honor's Project: Cloning and Expression of *Staphylococcus aureus purQ*.
- **David Wilson**<sup>5</sup> - Independent Study: Cloning and Expression of *Staphylococcus aureus purL*.
- **John Mazzullo**<sup>6</sup> - Honor's Project: Synthesis of Formylglycinamide ribonucleotide (FGAR) and amplification of human FGAR amidotransferase cDNA.
- **Jason Catanzaro** - Independent Study: Cloning of *Staphylococcus aureus purL*.
- **Rachel Lawton**<sup>3</sup> - Independent Study: Cloning of *Rhizobium etli purY*.
- **Kim Mistiszyn**<sup>3</sup> - Independent Study: Cloning of *Rhizobium etli purQ*.
- **Lori Schultz**<sup>3,5</sup> - Independent Study: Cloning and Expression of *Staphylococcus aureus purY*.
- **Laura Singer**<sup>3</sup> - Independent Study: Cloning of *Escherichia coli purL*.
- **Mark McClelland**<sup>3</sup> - Honor's Project: Site-Directed Mutagenesis of the Canine Factor IX Gene. Lab Assistant Project: Sequencing of the *Rhizobium etli purL* Gene.
- **Kathy Roberts** - Independent Study Project: Construction and Analysis of *Rhizobium loti* Purine Auxotrophs.
- **Lillian McTernan** - High School Student Project: Restriction Mapping of a Cosmid Containing the *Rhizobium etli purC*, *purY*, *purQ* and *purL* Genes. Awarded a High School Student Research Grant from the Pennsylvania Academy of Sciences.
- **Matthew Georgy**<sup>3</sup> - Honor's Project: The Construction of a Blue Fluorescent Protein Gene for Expression in Bacteria.
- **Monica Kerr** - Lab Assistant Project: Sequencing of the *Rhizobium etli purY* Gene.
- **Diana Burley**<sup>2</sup> - Independent Study Project: Examination of Host-Defense Responses during Infection of Legumes by Rhizobia Expressing Green Fluorescent Protein.
- **Kevin Ferguson**<sup>2,3,4</sup> - Honor's Project: Sequencing and Phenotypic Analysis of the Operon Containing the *purQ* Gene of *Rhizobium etli*.
- **Jonathan Cook**<sup>2,4</sup> - Honor's Project: Characterization of FGAR Amidotransferase in *Rhizobium etli*.

<sup>1</sup> Current student, Work in progress

<sup>2</sup> Presentation at the Eastern Colleges Science Conference.

<sup>3</sup> Presentation at the Annual Meeting of the Pennsylvania Academy of Sciences.

<sup>4</sup> Poster presented at the 1996 International Symposium for Molecular Plant-Microbe Interactions.

<sup>5</sup> Poster presented at Council for Undergraduate Research National Conference

<sup>6</sup> Presentation at American Chemical Society regional conference

## Local/College Service Activities

1999-present: Board member of Williamsport Municipal Water and Sanitary Authorities.

1997-present: Developed and maintain department web page.

1996-present: Over forty advisees (currently 31).

1996-present: Safety Committee, Biology Department Chemical Hygiene Officer.

1999-2000: Co-chair and author of report for Technology Task Force of Middle States Accreditation Review.

Sept., 1999: Presentation for Lycoming College Symposium on Evolution, "*A Typical Biologist's View of Evolution: Overwhelming Evidence.*"

Jan., 1998: Presentation for Williamsport Lions Club, "*Atherosclerosis: Causes, Effects, Treatments and Prevention.*"

1997: Developed web page for Saint Ann's Parish.

1996-1999: Academic Computing Committee (Secretary 97-98).

1996-1998: Videoconference Task Force, developed web page.